BMO Financial Group

# 2022 Annual Report to Shareholders

BMO

205th Annual Report

# Who we are

Established in 1817, BMO Financial Group is the eighth largest bank in North America by assets, with total assets of $1.14 trillion. We are highly diversified, providing a broad range of personal and commercial banking, wealth management, global markets and investment banking products and services. We serve twelve million customers across Canada and the United States, and in select markets globally, through three integrated operating groups.

## Personal and Commercial (P&C) Banking

Provides financial products and services to customers across North America. Personal and Business Banking helps customers make real financial progress through a network of branches, contact centres, digital banking platforms and automated teller machines. Commercial Banking serves clients as a trusted advisor, offering industry expertise, a local presence and a comprehensive range of commercial products and services.

## BMO Wealth Management (WM)

Serves a full range of clients, from individuals and families to business owners and institutions, offering a wide spectrum of wealth, asset management and insurance products and services aimed at helping clients plan, grow, protect and transition their wealth. Our asset management business is focused on delivering innovative client solutions and strategies.

## BMO Capital Markets (CM)

A North America-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. BMO Capital Markets has approximately 2,800 professionals in 32 locations around the world, including 18 offices in North America.

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**Business Review**



**Financial Review**



**Resources and Directories**

**12 million**
customers globally

**$1.14 trillion**
in total assets

**8th largest**
bank in North America by assets

**1817**
serving customers for 205 years and counting

# BOLDLY GROW THE GOOD

IN BUSINESS AND LIFE

## Our Purpose comprises three bold commitments:

### For a thriving economy

Providing access to capital and valuable financial advice – investing in businesses, supporting home ownership and strengthening the communities we serve, while driving innovation that makes banking easier

### For a sustainable future

Being our clients' lead partner in the transition to a net-zero world, delivering on our commitments to sustainable financing and responsible investing

### For an inclusive society

Committing to zero barriers to inclusion through investments, products, services and partnerships that remove systemic barriers for under-represented customers, employees and communities – and drive inclusion and equitable growth for everyone

# Our Strategy

BMO is building a digitally enabled, future-ready bank with leading efficiency, profitability and loyalty – all powered by a winning culture and driven by our Purpose. Our strategy connects our growth to driving positive, lasting change in the world. We are committed to progress for a thriving economy, a sustainable future and a more inclusive society with zero barriers.

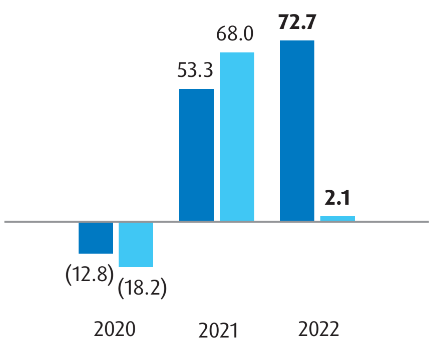
# Financial Performance

## Medium-term objectives[1]

| | 2022 financial performance | |
|---|---|---|
| | Reported | Adjusted[2] |
| **EPS** growth of **7%** to **10%** | 72.7% | 2.1% |
| **ROE** of **15%** or more | 22.9% | 15.2% |
| Net operating leverage of **2%** or more | 29.0% | 1.3% |
| Capital ratios that exceed regulatory requirements | 16.7% CET1 Ratio[3] | |

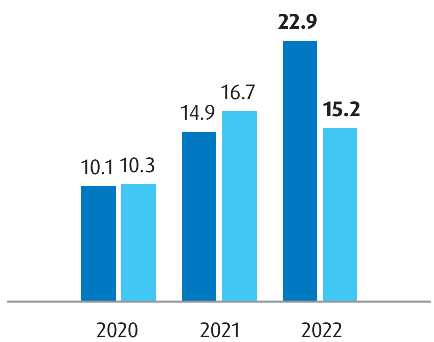
### Earnings Per Share Growth (%)

- Reported
- Adjusted[2]



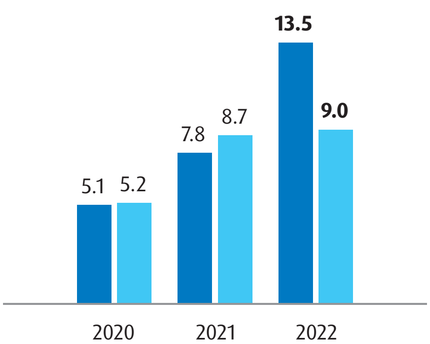

### Return on Equity (%)

- Reported
- Adjusted[2]



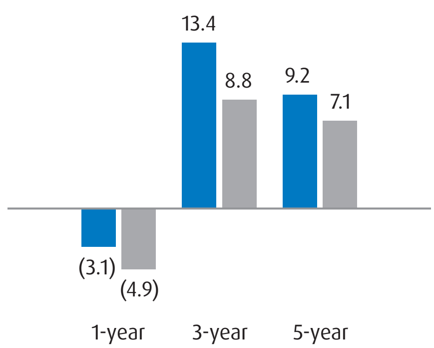

### Net Income (C$ billions)

- Reported
- Adjusted[2]




### Total Shareholder Return[4] (%)

- BMO
- S&P/TSX Composite Index




[1] We have established medium-term financial objectives for certain important performance measures. Medium-term is generally defined as three to five years, and performance is measured on an adjusted basis.
[2] Net revenue measures and all adjusted measures are non-GAAP measures. For further information, see the Non-GAAP and Other Financial Measures section of Management's Discussion and Analysis (MD&A). Regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms in the MD&A.
[3] The CET1 Ratio is disclosed in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.
[4] As of October 31, 2022.
[5] Percentages determined excluding results in Corporate Services.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Bank of Montreal brands the organization's member companies as BMO Financial Group. Note 26 of the consolidated financial statements lists the intercorporate relationships among Bank of Montreal and its significant subsidiaries.

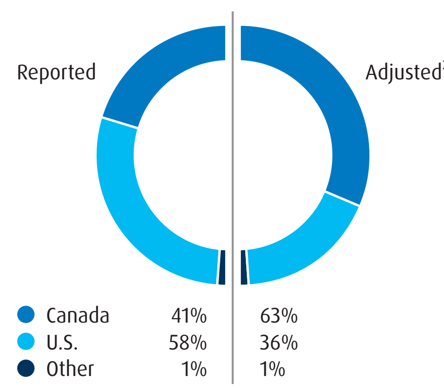
## A 194-year dividend record

BMO Financial Group has the longest-running dividend payout record of any company in Canada, at 194 years. BMO common shares had an annual dividend yield of 4.3% at October 31, 2022.

### Compound annual growth rate

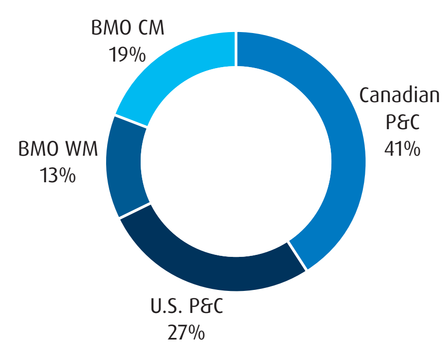
| 4.8% | 8.9% |
|---|---|
| BMO 15-year | BMO 5-year |

### Net Income by Geography




| | Reported | Adjusted[2] |
|---|---|---|
| Canada | 41% | 63% |
| U.S. | 58% | 36% |
| Other | 1% | 1% |

### Reported Net Income by Operating Group[5]



# Digital Awards and Recognition Highlights

BMO is digitally enabled and ready for the future. Across our operations, we put digital first – delivering speed and scale to enable progress for our customers, unlock the power of our people, leverage data and analytics, harness the potential of emerging technologies – and drive leading loyalty, growth and efficiency.

We're proud to be consistently recognized for our leadership and achievements. It's a testament to our employees, our innovative culture, and our ongoing commitment to creating excellent digital experiences for our customers, colleagues and communities.

## The Forrester Digital Experience Review™ (2022)

BMO was named the overall leader in The Forrester Digital Experience Review™: Canadian Mobile Banking Apps, Q4 2022, with the highest scores in the areas of money movement, self-service features, marketing/sales, content, error avoidance/recovery, and progress and workflow.

## Brandon Hall Group Human Capital Management Excellence Awards (2022)

BMO was recognized by Brandon Hall Group's HCM Excellence Awards in the category of Best Unique or Innovative Learning Program for its Financial Crimes Unit Academy, highlighting BMO's commitment to employee training and developing top talent.

## Insider Intelligence: 2022 Canada Mobile Emerging Features Benchmark (2022 | 2021)

In 2022, BMO ranked first overall in this prestigious benchmark, with top rankings for digital money management, account management and alerts. We also received top rankings in security and control, digital money management and alerts in 2021.

## Finovate Awards (2022)

BMO is making digital banking simpler – and better – for customers. Our Innov8 program ranked first in the Best Fintech Accelerator and Incubator category at the 2022 Finovate Awards for delivering leading digital experiences to help customers make real financial progress.

## Javelin Strategy & Research mobile and online banking scorecards (2022 | 2021)

In 2022, Javelin ranked BMO among the top five U.S. banks for online money movement, and the top 10 for ease of use and financial fitness functionality in both mobile and online banking. BMO was also ranked as an Overall Leader in mobile banking and won three category leader awards in Javelin's 2021 Canadian Digital Banking Scorecard.

## Keynova Group Online & Mobile Banker Scorecard (2022)

BMO was listed in the top 10 banks for online and mobile banking in the Keynova Group Q4 2022 Online Banker and Q3 2022 Mobile Banker Scorecards. For online banking we were among the top 10 banks in two scorecard categories and four scorecard tasks, including account opening – for which BMO was ranked as most improved.

# Chair's Message

**George A. Cope**
Chair of the Board

The past year has been challenging – the war in Ukraine, inflation and the lingering effects of the pandemic factored in all our lives – but 2022 was also the year that we started to get back to "normal." As the year ended, people began to return to the workplace, and, as economic activity picked up, grew hopeful that 2023 would be a better year. I am confident that will be the case.

At BMO Financial Group, there are many encouraging signs. Topping the list for the bank is our announced plan to acquire Bank of the West. Once completed, this acquisition will expand the bank's franchise into several important U.S. markets, including California – not only the state with the largest economy in the U.S., but one with an economy larger than Canada's as a whole. We are enthusiastic about what this means for BMO's future, and we have great confidence in the abilities of Darryl and his team to complete a smooth integration of the two organizations.

## Five years of performance

This past year marked the completion of Darryl's fifth year as CEO. As a board, as we look back over Darryl's tenure, we continue to be impressed by how well the leadership team is performing, despite the many challenges they have faced – challenges they have met thoughtfully, with deliberation and with care. The bank's performance over the past five years, both in absolute terms and relative to its peers, has been strong – and 2022 proved to be another good year.

The Board of Directors is particularly supportive of the leadership team's focus on removing all barriers to inclusion, and on its efforts to make the bank a leader in sustainability. These are also the board's priorities.

## An effective board

There were no changes to the board over the year, and none are immediately anticipated. Our 13-member board comprises six women and seven men, in keeping with our commitment to maintain a gender-balanced board, and three of our board committee chairs are women. We also continue to have balanced representation on the board from both Canada and the United States – six of our directors are American and seven are Canadian. Our adherence to age and term limits for directors ensures ongoing renewal, allowing us to plan chair selection, committee representation and board composition thoughtfully and strategically. We continually look for opportunities to shape a diverse board to ensure that we have the full benefit of the varied talents, knowledge, and work and life experiences that only diversity can bring.

On behalf of you, the shareholders, we extend our thanks to all the employees of BMO who were behind our successful performance. And on behalf of the board, we extend our thanks to you, our fellow shareholders, for the trust you continue to place in us to represent your interests. The year ahead promises to be one full of opportunity. We are confident that your company has the right strategy and the right team to take full advantage of these opportunities as they present themselves.

**George A. Cope**

# Chief Executive Officer's Message

**Darryl White**
Chief Executive Officer

2022 marked a significant year of progress in our proud 205-year history, as we continued to Boldly Grow the Good *in business and life* for our clients and the communities we serve – while building a high-performing, digitally enabled, future-ready bank.

Our competitive performance in 2022 was driven by our leading Winning Culture, and an empowered team aligned to achieving our strategic priorities. With their focus on helping our clients make real financial progress throughout a dynamic operating environment, our bankers are partnering across our businesses to deliver the exceptional experiences that deepen client loyalty.

As global economic momentum slows in the post-pandemic recovery, our bank has a critical role in helping economies and communities to thrive and our clients to maintain – and strengthen – their progress for the future.

The North American economy has faced headwinds throughout 2022, impacted by a dramatic escalation of geopolitical tensions beyond our borders, weakening financial conditions, and continued supply-chain disruptions. Looking forward, to curb high inflation growth, tightening monetary policy has increased the cost of borrowing and should dampen demand, weakening GDP growth in both Canada and the U.S. For Team BMO, this reinforces the imperative to sustain our efficiency performance and profitability that position us to best support our clients, while driving value for our shareholders.

## Diversified business mix built for the long run

Our diversified and advantaged business mix enables us to deliver resilient revenue performance through economic cycles. With operations across personal and commercial banking, wealth management and capital markets, coupled with our geographic diversification, our bank delivered very good revenue performance again this year.

We continued to execute on our strategy to strengthen and grow our businesses with targeted investments in technology to drive efficiency, speed and scale, as well as talent to deliver the award-winning customer experiences we're known for. With robust, high-quality growth in loans and deposits, and expanding net interest margins, we met our commitments to positive operating leverage, improved efficiency and achieved above-target return on equity.

Our leading risk management approach and dynamic management of capital and resources enable us to grow our businesses and support our customers in the years ahead. With the longest-running dividend payout record of any company in Canada at 194 years, we aim to deliver top-tier returns for our shareholders.

## North American strength

BMO's three operating groups are deeply integrated between Canada and the United States, with a supportive global presence. Our geographic diversification is a differentiator and a major source of strength – and our footprint lays the optimal foundation for the natural next step in our North American growth strategy.

We've operated in the United States since 1818, and we've meaningfully grown our presence since the 1984 acquisition of Harris Bank, through strong organic growth supplemented by successive acquisitions, including M&I, GE Transportation Finance and KGS. In short order, we plan to expand our reach once again with the announced acquisition of California-based Bank of the West – the largest bank acquisition in Canadian history. This combination with Bank of the West deepens BMO's position as a leading North American bank with a strong – and growing – U.S. franchise.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP and Other Financial Measures section.

# Our strategic priorities

Our group strategic priorities align with and support our enterprise-wide strategy, positioning us well to drive competitive performance.

Upon closing, we will significantly increase our U.S. footprint, providing access to major new markets for our commercial banking expansion, and doubling our U.S. retail branch network. We look forward to welcoming nearly 1.8 million Bank of the West commercial, retail, wealth management and business banking customers to our organization.

With a shared focus on progress for our clients, communities and planet, we'll combine our strengths and solidify our position as a leading North American bank.

## Digital first for speed, scale and simplicity

BMO has consistently focused on meeting customers where they are with leading digital experiences that help them make real financial progress. These efforts are core to our Digital First journey and are complemented by a focus on driving efficiency and freeing up human capacity to give expert advice.

Our investments over the past year have driven growth, loyalty and efficiency, enabled by new ways of working. Our newly enhanced Canadian online banking platform enables customers to navigate their digital banking more easily, while our mobile banking app is consistently recognized as best-in-class thanks to AI-powered features like *BMO Insights* that help customers better manage their day-to-day finances.

Our Digital First mindset reaches beyond our doors and into the communities we serve. To help drive data and analytics innovation in Canada, we partnered with Next AI – a world-class program for AI-based ventures and technology commercialization. By supporting innovators and early-stage teams with the capital they need to grow and create jobs, it's one of many ways we're supporting businesses and accelerating progress.

## Bold commitments for a better tomorrow

By living our Purpose to Boldly Grow the Good *in business and life*, BMO is driving progress for a thriving economy, a sustainable future and an inclusive society. Three years ago, we committed to "Double the Good" in each of those areas by 2025 – and we're well on our way to achieving our goals.

A thriving economy is resilient and helps drive equitable financial progress. BMO helps enable that progress through lending, investing, giving and engagement in our local communities. In the past year, we announced commitments of $5 billion to support women entrepreneurs in Canada and up to $100 million to launch *Business Within Reach: BMO for Black Entrepreneurs*. In the U.S., we introduced *BMO for Native-Owned Businesses* as part of our five-year, US$5 billion *BMO EMpower* initiative, and achieved US$66 million in lending for our Black, Latinx and women small business pillar.

Crucially, we're focusing on the future by addressing the pressing need of climate change. To achieve net-zero emissions targets, many businesses are looking for informed advice and financing solutions. That's why BMO collaborated with Export Development Canada to provide capital to help Canadian businesses transition away from carbon-intensive operations. It's part of our ambition to be our clients' lead partner in the transition to a net zero world.

We're also leading the way in the clean energy economy with initiatives like the *BMO Climate Institute* – a centre of expertise bridging science, policy and finance to help shape the market for climate solutions. We're considered a trusted advisor supporting the actions being taken by companies and governments as they pursue energy transition opportunities. For our peer-leading accomplishments, we were ranked the most sustainable bank in North America for the third year in a row by *Corporate Knights*.

**World-class loyalty and growth,** powered by One Client leadership

**Winning Culture** driven by alignment, empowerment and recognition

**Digital First** for speed, scale and the elimination of complexity

**Lead partner** in our clients' transition to a net zero world

**Superior management** of **risk**, **capital** and **funding** performance

BMO's future focus is also reflected in our Zero Barriers to Inclusion strategy, which aims to actively remove barriers while helping groups that face systemic hurdles overcome them – and thrive. This past year, we launched an innovative product empowering our Canadian transgender and non-binary customers to use their preferred first name on their Mastercard. Acceptance and understanding are key to advancing an inclusive society, which is why we're supporting grassroots Indigenous reconciliation initiatives by making our ground-breaking Indigenous e-learning platform, Nisitohtamowin ᓂᓯᑐᐦᑕᒧᐃᐧᐣ, free to the public for the next three years.

As one of the Best Employers for Diversity, according to *Forbes*, we know the advantages of fielding a diverse and inclusive team. This year, BMO launched a recruitment program helping immigrants, refugees and displaced persons – including Ukrainians fleeing conflict and resettling in North America – to find new employment opportunities. We also continued to focus on increasing representation of Black, Indigenous, People of Colour, Latinx and LGBTQ2+ minority groups among our workforce, while sustaining our strong gender equity position.

Our employees are the best representation of BMO in our communities, and supporting their personal and professional growth has a measurable impact on our performance. To attract and retain the best people, we offer highly competitive wellness and learning and development programs. We've been focused on activating our Winning Culture, and have made significant progress in a short period of time. And according to an independent third-party assessment, BMO's performance culture now ranks among the best financial institutions surveyed globally.

The passion and commitment of Team BMO are apparent in all the ways we show up for our communities. Last year, we reached a major milestone, achieving $200 million in employee pledges to United Way and other charitable causes over the course of a decade, with a remarkable recent employee participation rate of 90%. Together, we're helping to shape the future by growing more of the good.

## Financial progress

As we go forward, the factors that have contributed to our success for 205 years will continue to propel our growth through uncertain economic conditions. With a dedicated team, a growing U.S. footprint, and an increasingly diverse client base, we have more opportunities than ever to grow the good and support financial progress for our clients and communities. The strength of our diversified business mix and solid operational performance will see us through market cycles, as we execute on our strategy and deliver consistently strong returns for our shareholders.

**Darryl White**

# Fuelling economic progress


Read more about Zócalo later in December 2022 at about.bmo.com/blog/

Photography: Kevin Netz

**Zócalo Food Truck Park**
Milwaukee, Wisconsin

"We wanted to build a community that allowed creativity to thrive," says BMO customer Jesus Gonzalez. Jesus is the co-founder and operator of Milwaukee's Zócalo, a collective of food vendors.

After attending The Culinary Institute of America in Hyde Park, New York, Jesus came home eager to celebrate two passions – his hometown, and food – and opened Mazorca, a taco truck.

"I started seeing like-minded people," says Jesus. Inspired, Jesus and business partner Sean Phelan created a community space for vendors to join together, selling food from all over the world.

Zócalo also serves as an incubator for aspiring food vendors, offering a starter food truck and business coaching. As a successful entrepreneur with a growing portfolio of projects, Jesus is a strong believer in mentoring and empowering others. "Impacting my community," he says, "that's how I measure my success."

# We're powering economic progress by helping individuals, families and businesses succeed.

## One Client leadership

BMO has a clear One Client focus, which was recognized this year when we received the highest customer satisfaction ranking in retail banking advice in the J.D. Power 2022 Canada Retail Banking Advice Satisfaction Study*. The study analyzes direct feedback from thousands of retail bank customers across Canada. BMO scored top marks in categories demonstrating our continued commitment to helping customers make real financial progress, including clarity of advice and concern for customer needs.

## U.S. expansion

BMO's planned acquisition of Bank of the West will enable expansion in attractive markets, and capabilities that will drive greater growth, returns and efficiencies. The transaction also provides significant opportunities for collaboration in environmental, social and governance investing and product innovation.

## A winning bank

BMO was named Best Private Bank for the 12th year in a row, Best Commercial Bank in Canada for the eighth consecutive year, and Best Retail Bank in Canada by *World Finance*.

## Banking excellence

BMO was recognized by customers as one of the best banks in North America in *Forbes'* ranking of the World's Best Banks.

## Enabling entrepreneurs

BMO EMpower, our five-year, US$5 billion commitment to inclusive economic recovery in the U.S., has already exceeded its early targets, with more than US$5.5 billion committed in just two years. And in Canada, BMO has committed $100 million to launch *Business Within Reach: BMO for Black Entrepreneurs*. The program provides business owners with greater access to working capital, educational resources and professional partnerships to start up, scale up and grow.

## Leading advice

BMO has long been a global leader in the metals and mining sector. In 2022, we advised on the largest gold M&A transaction in history. BMO was also recognized by *Global Finance* magazine as the World's Best Metals & Mining Investment Bank for the 13th consecutive year.

*BMO Bank of Montreal received the highest score in the J.D. Power 2020 and 2022 (tied) Canada Retail Banking Advice Satisfaction Studies of customers' satisfaction with advice and guidance from their primary bank. Visit jdpower.com/awards for more details.

# Powering sustainable solutions

We're committed to making meaningful progress by supporting climate change solutions.

## Digital First mindset

To help unlock climate solutions for clients and enable our Net Zero Ambition, BMO's sustainability team has partnered with our technology and operations group to develop a unique digital platform leveraging geospatial technology to better understand climate impacts and opportunities.

## Cleantech innovation

BMO partnered with Breakthrough Energy Catalyst to accelerate the development of clean technologies and climate solutions essential for a net-zero world, committing $50 million over five years and leveraging our project finance and energy transition expertise.

## A global first

BMO Capital Markets launched the world's first nuclear green financing framework for Bruce Power, and supported Capital Power with their green hybrid transaction issuance, a first in Canada.

## Most sustainable bank

BMO was named to *Corporate Knights*' 2022 ranking of the World's 100 Most Sustainable Corporations and, for the third year in a row, ranked as the most sustainable bank in North America.

## Green finance

Advancing our goal to mobilize $300 billion in sustainable finance by 2025, in 2022 BMO acted as joint lead manager for the Government of Canada's inaugural Green Bond transaction, a landmark achievement. The $5 billion transaction demonstrates Canada's environmental leadership, ensures government expenditures align with Canada's ESG goals and principles, and acts as a catalyst for the continued development of the sustainable finance market in Canada.

## Financing the transition

BMO and Export Development Canada (EDC) are working together to help large and mid-sized Canadian businesses in carbon-intensive sectors transition to more sustainable business models, aligned with Canada's commitment to net-zero emissions by 2050. BMO is also the first financial institution to offer EDC's new Sustainable Financing Guarantee, which provides an initial $1 billion in financing over three years to support sustainable initiatives across nine carbon-intensive sectors.

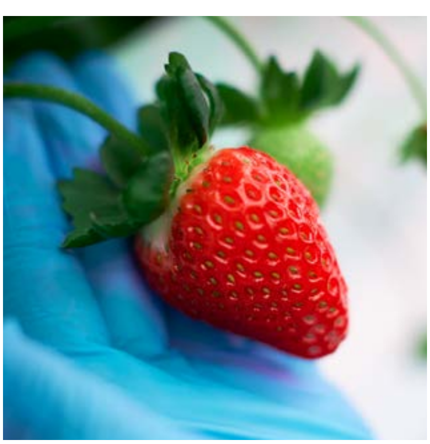
**Nature Fresh Farms**
Leamington, Ontario

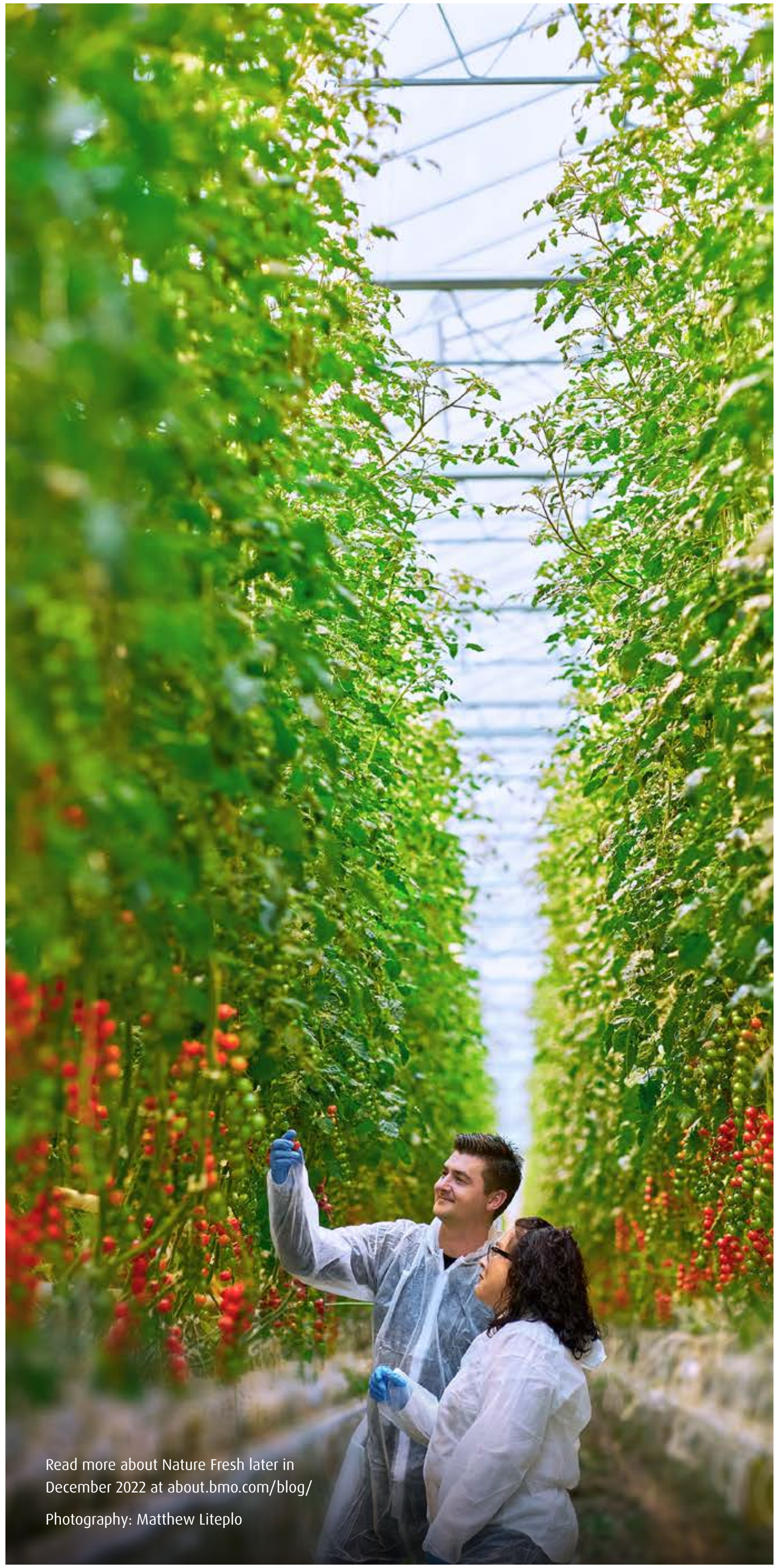
Greenhouse farming is essential to feeding the world. Nature Fresh Farms, a family-owned and managed company, is one of the largest vertically integrated leaders in greenhouse-grown produce in North America. Committed to sustainable farming, they're continuously developing and improving their technology and practices to grow more environmentally friendly food.

"We've grown with Nature Fresh since their inception," says Brendan O'Connor, Managing Director, BMO Commercial Bank, Agriculture & Agri-Business. "They're the future of food production."

Headquartered in Ontario, with greenhouses in Canada and the United States, Nature Fresh makes sustainable farming practices central to their operations; they recycle their nutrient water using a closed-loop system, use bumblebees to pollinate their crops and "good bugs" to reduce pesticides, grow plants in coconut husks and practice vertical growing, enabling them to grow more produce in a smaller space.

Nature Fresh also conducts research through their Research & Development and Discovery Centers, committed to advancing greenhouse innovation and sustainable food security. That innovative spirit is behind one of their cornerstone beliefs: "Doing things differently is what truly makes a difference."





Read more about Nature Fresh later in December 2022 at about.bmo.com/blog/

Photography: Matthew Liteplo

# A more equitable future

Read more about Brandi later in December 2022 at about.bmo.com/blog/

Photography: Christian Fleury

## A passion for change

New York City, NY

For sixteen years, Brandi Snape, Executive Assistant, BMO Capital Markets, has volunteered as a motivational speaker and mentor in the New York City and New York State departments of correction. Her passion for criminal justice reform was sparked in her childhood, when her parents were incarcerated. "I know that each prisoner has a story – and represents a family," she says.

Brandi is inspired by BMO's commitment to equity – and she's found new outlets for her passion through her job. "Brad Rothbaum, my manager, sits on the board of United Way of New York City. Through his partnership, I was able to connect with United Way on Project Atlas, a prison reform initiative." The desire to make positive change is common to many of Brandi's colleagues. "A motivating factor is having leadership that embodies the idea of Boldly Grow the Good *in business and life*," she says. "Giving, and reaching beyond, is what BMO does, and I'm so happy to be part of the team."

# We're building a more inclusive society for all by removing barriers for our colleagues, clients and communities.

## Diversity leadership

BMO's commitment to diversity and inclusion in the workplace was recognized once again by *Forbes*, which named BMO as one of America's Best Employers for Diversity for the fourth year in a row. And for the fifth consecutive year, we were recognized by the Human Rights Campaign Foundation as an industry leader in LGBTQ+ workplace equality, receiving a score of 100 on the 2022 Corporate Equality Index (CEI).

## Eradicating poverty

We're committed to working with our communities to build a more equitable society. For 14 years, we've partnered with Cara Collective, a workforce development organization dedicated to eradicating poverty. In 2022, Cara Collective recognized BMO with its Good Neighbor Award for the BMORE program, which was co-created by BMO and Cara Collective two years ago to remove barriers to employment and increase access to careers in banking and finance.

## Breaking down barriers

To help address barriers facing minority businesses, communities and families, we've committed $5 billion to support women entrepreneurs in Canada, and an additional US$5 billion over five years to address key barriers faced by minority businesses, communities and families in the United States, through the BMO EMpower program.

## A fresh start

All our customers have unique needs and experiences, and we're focused on expanding financial inclusion with innovative banking products, services and resources. Through our BMO NewStart Program, we offer discounted or free banking products and services for permanent residents and foreign workers. This program is designed to help make setting up a new life in Canada easier.

## Supporting newcomers

Helping to create a more equitable and inclusive society is core to BMO's Purpose. We've launched the BMO Newcomer Talent Program to help immigrants, refugees and displaced persons find new employment opportunities in Canada and the United States.

## Gender equality

For seven consecutive years, BMO has been named to the prestigious Bloomberg Gender-Equality Index, in recognition of our commitment to gender equality, as well as our role as a global leader in gender inclusion.

# Board of Directors[1]

**George A. Cope, C.M.**
Corporate Director
**Board/Committees:**
Board Chair,
Governance and Nominating,
Human Resources
**Director since:** 2006

**Janice M. Babiak, CPA (US), CA (UK), CISM, CISA**
Corporate Director
**Board/Committees:**
Audit and Conduct Review (Chair),
Governance and Nominating
**Director since:** 2012

**Sophie Brochu, C.M.**
President and Chief Executive Officer,
Hydro-Québec
**Board/Committees:**
Governance and Nominating,
Human Resources
**Director since:** 2011

**Craig W. Broderick**
Corporate Director
**Board/Committees:**
Governance and Nominating,
Risk Review (Chair)
**Director since:** 2018

**Stephen Dent**
Managing Director and Co-Founder,
Birch Hill Equity Partners
**Board/Committees:**
Risk Review
**Director since:** 2021

**Christine A. Edwards**
Corporate Director
**Board/Committees:**
Governance and Nominating (Chair),
Human Resources
**Director since:** 2010

**Dr. Martin S. Eichenbaum**
Charles Moskos Professor of
Economics, Northwestern University
**Board/Committees:**
Audit and Conduct Review,
Risk Review
**Director since:** 2015

**David Harquail**
Chair of the Board,
Franco-Nevada Corporation
**Board/Committees:**
Audit and Conduct Review,
Risk Review
**Director since:** 2018

**Linda S. Huber**
Chief Financial Officer,
FactSet Research Systems Inc.
**Board/Committees:**
Audit and Conduct Review,
Risk Review
**Director since:** 2017

**Eric R. La Flèche**
President and Chief Executive Officer,
Metro Inc.
**Board/Committees:**
Human Resources
**Director since:** 2012

**Lorraine Mitchelmore**
Corporate Director
**Board/Committees:**
Governance and Nominating,
Human Resources (Chair),
Risk Review
**Director since:** 2015

**Madhu Ranganathan**
Executive Vice-President
and Chief Financial Officer,
OpenText Corporation
**Board/Committees:**
Audit and Conduct Review
**Director since:** 2021

**Darryl White**
Chief Executive Officer,
BMO Financial Group
**Director since:** 2017

# Executive Committee[1]

**Darryl White**
Chief Executive Officer,
BMO Financial Group

**Piyush Agrawal**
Chief Risk Officer,
BMO Financial Group

**Daniel Barclay**
Group Head,
BMO Capital Markets

**David Casper**
Chief Executive Officer,
BMO Financial Corp.
and Group Head,
North American
Commercial Banking

**Cameron Fowler**
Chief Strategy and
Operations Officer,
BMO Financial Group

**Sharon Haward-Laird**
General Counsel,
BMO Financial Group

**Ernie (Erminia) Johannson**
Group Head,
North American Personal
and Business Banking

**Deland Kamanga**
Group Head,
BMO Wealth Management

**Mona Malone**
Head,
People & Culture and Chief
Human Resources Officer,
BMO Financial Group

**Steve Tennyson**
Chief Technology
and Operations Officer,
BMO Financial Group

**Tayfun Tuzun**
Chief Financial Officer,
BMO Financial Group

[1] As at November 1, 2022.

# Enhanced Disclosure Task Force

On October 29, 2012, the Enhanced Disclosure Task Force (EDTF) of the Financial Stability Board published its first report, *Enhancing the Risk Disclosures of Banks*. We support the recommendations issued by EDTF for the provision of high-quality, transparent risk disclosures.

Disclosures related to the EDTF recommendations are detailed in the index below, as presented in this 2022 Annual Report, the Supplementary Financial Information (SFI) or Supplementary Regulatory Capital Information (SRCI). Information on BMO's website, including information within the SFI or SRCI, is not, and should not be considered to be incorporated by reference into this 2022 Annual Report.

| Topic | EDTF Disclosure | Page number | | |
|---|---|---|---|---|
| | | Annual Report | SFI | SRCI |
| **General** | 1. Present all risk-related information in each report, providing an index for easy navigation | 73-113 | Index | Index |
| | 2. Define the bank's risk terminology and risk measures and present key parameters used | 83-113, 131-133 | | |
| | 3. Discuss top and emerging risks for the bank and changes in risk exposure | 73-75 | | |
| | 4. Outline plans to meet new key regulatory ratios once the applicable rules are finalized | 67 | | |
| **Risk Governance, Risk Management and Business Model** | 5. Summarize the bank's risk management organization, processes, and key functions | 77-82 | | |
| | 6. Describe the bank's risk culture and procedures applied to support the culture | 82 | | |
| | 7. Describe key risks that arise from the bank's business model and activities | 80 | | |
| | 8. Describe the use of stress testing within the bank's risk governance and capital frameworks | 81-82 | | |
| **Capital Adequacy and Risk-Weighted Assets (RWA)** | 9. Provide minimum Pillar 1 capital requirements | 66-68 | | 3-4,10 |
| | 10. Summarize information contained in the composition of capital templates and disclose a reconciliation of the accounting balance sheet to the regulatory balance sheet<br>• A Main Features template can be found at https://www.bmo.com/main/about-bmo/investor-relations/regulatory-disclosure | 68 | | 3-5 |
| | 11. Present a flow statement of movements in regulatory capital, including changes in Common Equity Tier 1, Additional Tier 1, and Tier 2 capital | | | 6 |
| | 12. Discuss capital planning within a more general discussion of management's strategic planning | 65 | | |
| | 13. Provide granular information to explain how RWA relate to business activities, including management's capital targets | 69 | | 11 |
| | 14. Present a table showing the capital requirements for each method used for calculating RWA | 69,83-87 | | 11,17-30,37-43 |
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| | 16. Present a flow statement that reconciles movements in RWA by credit risk and market risk | | | 31,57 |
| | 17. Describe the bank's Basel validation and back-testing process. Included in our SRCI is our estimated and actual loss parameter information | 106-107 | | 58-62 |
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# Management's Discussion and Analysis

MD&A

BMO's Chief Executive Officer and Chief Financial Officer have signed a statement outlining management's responsibility for financial information in the annual consolidated financial statements and Management's Discussion and Analysis (MD&A). The statement also explains the roles of the Audit and Conduct Review Committee and Board of Directors in respect of that financial information.

The MD&A comments on our operations and financial condition for the years ended October 31, 2022 and 2021. The MD&A should be read in conjunction with the consolidated financial statements for the year ended October 31, 2022. The MD&A commentary is as at December 1, 2022. Unless otherwise indicated, all amounts are stated in Canadian dollars and have been derived from consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. We also comply with interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions (OSFI) Canada. References to generally accepted accounting principles (GAAP) mean IFRS.

## Index



**Regulatory Filings**

BMO's continuous disclosure materials, including our interim consolidated financial statements and interim MD&A, audited annual consolidated financial statements and annual MD&A, Annual Information Form and Notice of Annual Meeting of Shareholders and Management Proxy Circular, are available on our website at www.bmo.com/investorrelations, on the Canadian Securities Administrators' website at www.sedar.com and on the EDGAR section of the U.S. Securities and Exchange Commission's (SEC) website at www.sec.gov. BMO's Chief Executive Officer and Chief Financial Officer certify the appropriateness and fairness of BMO's annual and interim consolidated financial statements, annual MD&A and Annual Information Form, the effectiveness of BMO's disclosure controls and procedures and the effectiveness of, and any material weaknesses relating to, BMO's internal control over financial reporting. Information contained in, or otherwise accessible through, our website (www.bmo.com) or any third-party websites mentioned herein, does not form part of this document.

**Caution**

The About BMO, Financial Objectives and Value Measures, Supporting a Sustainable and Inclusive Future, Significant Events, Economic Developments and Outlook, 2023 Focus, Business Environment and Outlook, Enterprise-Wide Capital Management, Off-Balance Sheet Arrangements, Enterprise-Wide Risk Management, Future Changes in Accounting Policies and Other Regulatory Developments sections contain certain forward-looking statements. By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties. Refer to the Caution Regarding Forward-Looking Statements for a discussion of such risks and uncertainties and the material factors and assumptions related to the statements set forth in such sections.

### Factors That May Affect Future Results

As noted in the following Caution Regarding Forward-Looking Statements, all forward-looking statements and information, by their nature, are subject to inherent risks and uncertainties, both general and specific, which may cause actual results to differ materially from the expectations expressed in any forward-looking statement. The Enterprise-Wide Risk Management section describes a number of risks, including credit and counterparty, market, insurance, liquidity and funding, operational non-financial, legal and regulatory, strategic, environmental and social, and reputation risk. Should our risk management framework prove ineffective, there could be a material adverse impact on our financial position and results.

### Caution Regarding Forward-Looking Statements

Bank of Montreal's public communications often include written or oral forward-looking statements. Statements of this type are included in this document, and may be included in other filings with Canadian securities regulators or the U.S. Securities and Exchange Commission, or in other communications. All such statements are made pursuant to the "safe harbor" provisions of, and are intended to be forward-looking statements under, the United States *Private Securities Litigation Reform Act of 1995* and any applicable Canadian securities legislation. Forward-looking statements in this document may include, but are not limited to, statements with respect to our objectives and priorities for fiscal 2023 and beyond, our strategies or future actions, our targets and commitments (including with respect to net zero emissions), expectations for our financial condition, capital position or share price, the regulatory environment in which we operate, the results of, or outlook for, our operations or for the Canadian, U.S. and international economies, the closing of our proposed acquisition of Bank of the West, including plans for the combined operations of BMO and Bank of the West and the financial, operational and capital impacts of the transaction, and include statements made by our management. Forward-looking statements are typically identified by words such as "will", "would", "should", "believe", "expect", "anticipate", "project", "intend", "estimate", "plan", "goal", "commit", "target", "may", "might", "schedule", "forecast", "outlook", "timeline", "suggest", "seek" and "could" or negative or grammatical variations thereof.

By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, both general and specific in nature. There is significant risk that predictions, forecasts, conclusions or projections will not prove to be accurate, that our assumptions may not be correct, and that actual results may differ materially from such predictions, forecasts, conclusions or projections. We caution readers of this document not to place undue reliance on our forward-looking statements, as a number of factors – many of which are beyond our control and the effects of which can be difficult to predict – could cause actual future results, conditions, actions or events to differ materially from the targets, expectations, estimates or intentions expressed in the forward-looking statements.

The future outcomes that relate to forward-looking statements may be influenced by many factors, including, but not limited to: general economic and market conditions in the countries in which we operate, including labour challenges; the severity, duration and spread of the COVID-19 pandemic, and possibly other outbreaks of disease or illness, and their impact on local, national or international economies, as well as their heightening of certain risks that may affect our future results; information, privacy and cybersecurity, including the threat of data breaches, hacking, identity theft and corporate espionage, as well as the possibility of denial of service resulting from efforts targeted at causing system failure and service disruption; benchmark interest rate reforms; technological changes and technology resiliency; political conditions, including changes relating to, or affecting, economic or trade matters; climate change and other environmental and social risk; the Canadian housing market and consumer leverage; inflationary pressures; global supply-chain disruptions; changes in monetary, fiscal, or economic policy; changes in laws, including tax legislation and interpretation, or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; weak, volatile or illiquid capital or credit markets; the level of competition in the geographic and business areas in which we operate; exposure to, and the resolution of, significant litigation or regulatory matters, our ability to successfully appeal adverse outcomes of such matters and the timing, determination and recovery of amounts related to such matters; the accuracy and completeness of the information we obtain with respect to our customers and counterparties; failure of third parties to comply with their obligations to us; our ability to execute our strategic plans, complete proposed acquisitions or dispositions and integrate acquisitions, including obtaining regulatory approvals; critical accounting estimates and judgments, and the effects of changes to accounting standards, rules and interpretations on these estimates; operational and infrastructure risks, including with respect to reliance on third parties; the possibility that our proposed acquisitions, including our acquisition of Bank of the West, do not close when expected, or at all, because required regulatory approvals and other conditions to closing are not received or satisfied on a timely basis, or at all, or are received subject to adverse conditions or requirements; the anticipated benefits from proposed acquisitions, including Bank of the West, such as potential synergies and operational efficiencies, are not realized; our ability to manage exposure to capital arising from changes in fair value of assets and liabilities between signing and closing; our ability to perform effective fair value management actions and unforeseen consequences arising from such actions; changes to our credit ratings; global capital markets activities; the possible effects on our business of war or terrorist activities; natural disasters and disruptions to public infrastructure, such as transportation, communications, power or water supply; and our ability to anticipate and effectively manage risks arising from all of the foregoing factors.

We caution that the foregoing list is not exhaustive of all possible factors. Other factors and risks could adversely affect our results. For more information, please refer to the discussion in the Risks That May Affect Future Results section, and the sections related to credit and counterparty, market, insurance, liquidity and funding, operational non-financial, legal and regulatory, strategic, environmental and social, and reputation risk, in the Enterprise-Wide Risk Management section, as updated by quarterly reports, all of which outline certain key factors and risks that may affect our future results. Investors and others should carefully consider these factors and risks, as well as other uncertainties and potential events, and the inherent uncertainty of forward-looking statements. We do not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by the organization or on its behalf, except as required by law. The forward-looking information contained in this document is presented for the purpose of assisting shareholders and analysts in understanding our financial position as at and for the periods ended on the dates presented, as well as our strategic priorities and objectives, and may not be appropriate for other purposes.

Material economic assumptions underlying the forward-looking statements contained in this document include those set out in the Economic Developments and Outlook section, as updated by quarterly reports, as well as in the Allowance for Credit Losses section, as updated by quarterly reports. Assumptions about the performance of the Canadian and U.S. economies, as well as overall market conditions and their combined effect on our business, are material factors we consider when determining our strategic priorities, objectives and expectations for our business. Assumptions about Bank of the West's balance sheet, product mix and margins, and interest rate sensitivity were material factors we considered in estimating the fair value and goodwill and intangibles amounts at closing, and assumptions about our integration plan, the efficiency and duration of integration and the alignment of organizational responsibilities were material factors we considered in estimating pre-tax cost synergies. In determining our expectations for economic growth, we primarily consider historical economic data, past relationships between economic and financial variables, changes in government policies, and the risks to the domestic and global economy.

# About BMO

Established in 1817, BMO Financial Group (BMO, Bank of Montreal, the bank, we, our, us) is the eighth largest bank in North America by assets, with total assets of $1.14 trillion. We are highly diversified, providing a broad range of personal and commercial banking, wealth management, global markets and investment banking products and services. We serve twelve million customers across Canada and the United States, and in select markets globally, through three integrated operating groups: Personal and Commercial Banking, BMO Wealth Management and BMO Capital Markets.

At BMO, we continue to build a high-performing, digitally-enabled, future-ready bank with highly engaged employees and a winning culture. We are focused on helping our customers make real financial progress and financing our clients' growth and innovation while investing in our workforce. Anchored in our Purpose, we are driven by our strategic priorities for growth, strengthened by our approach to sustainability, and guided by our values to build a foundation of trust with our stakeholders.

## Our Purpose: Boldly Grow the Good *in business and life*

BMO has a deep sense of purpose – to be a champion for progress and a catalyst for change. We are leveraging our position as a leading financial services provider to create opportunities for our communities and our stakeholders to make positive, sustainable change, because we believe that success can and must be mutual. Our bold commitments for a thriving economy, a sustainable future and an inclusive society are reflected in our active, direct response to today's most pressing challenges.

- **Thriving economy** – Providing access to capital and valuable financial advice – investing in businesses, supporting home ownership and strengthening the communities we serve, while driving innovation that makes banking easier
- **Sustainable future** – Being our clients' lead partner in the transition to a net zero world, delivering on our commitments to sustainable financing and responsible investing
- **Inclusive society** – Committing to zero barriers to inclusion through investments, products, services and partnerships that remove systemic barriers for under-represented customers, employees and communities – and drive inclusion and equitable growth for everyone

## Our Strategic Priorities

Consistent strong performance is essential to realizing our Purpose. We aim to deliver top-tier total shareholder return and achieve our financial objectives by aligning our operations with, and executing on, our strategic priorities. Keeping the fundamentals of our strategy consistent, we renewed our priorities for fiscal 2023 to reflect our strong momentum and the changing environment:

- **World-class** loyalty and growth, powered by One Client leadership, bringing the full suite of BMO's products, services and advice to our clients
- **Winning culture** driven by alignment, empowerment and recognition
- **Digital First** for speed, scale and the elimination of complexity
- **Lead partner** in our clients' **transition** to a **net zero world**
- **Superior management** of **risk, capital** and **funding** performance

Our group strategic priorities align with and support our enterprise-wide strategy, positioning us well to drive competitive performance. The group strategies are outlined in the 2022 Operating Groups Performance Review.

## Our Approach to Sustainability

Our commitment to sustainability is embedded in our strategy and is fundamental to our Purpose. We identify the most significant effects of our business operations, products and services on our stakeholders and the communities in which we operate. We take steps to manage our business in a manner that is consistent with our sustainability objectives, while also considering the interests of our stakeholders. We apply a variety of environmental, social and governance (ESG) practices and benchmarks to capture opportunities and manage risks in key areas such as sustainable finance, climate change, human rights, and diversity, equity and inclusion.

## Our Values

Four core values shape our culture and underpin our choices and actions:

- **Integrity**
- **Diversity**
- **Responsibility**
- **Empathy**

**Caution**
This About BMO section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Financial Objectives and Value Measures

Results and measures in this section are presented on a reported and an adjusted basis, and management considers both to be useful in assessing our performance. We believe that the non-GAAP measures and ratios presented here, read together with our GAAP results, provide readers with a better understanding of how management assesses results and are a better reflection of ongoing business performance.

Adjusted results and measures in this section, including earnings per share (EPS), EPS growth, return on equity (ROE), return on tangible common equity (ROTCE), net income, revenue, non-interest expense, efficiency ratio and operating leverage, are non-GAAP amounts, measures and ratios, and are discussed in the Non-GAAP and Other Financial Measures section.

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and we calculate our efficiency ratio and operating leverage on a similar basis. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equity markets, that is largely offset in CCPB. Presenting our revenue, efficiency ratio and operating leverage on a net basis allows for a better assessment of operating results.

Measures and ratios on a net revenue basis are non-GAAP. For more information on CCPB, refer to the Non-GAAP and Other Financial Measures section. Information regarding the composition of each of these measures is also provided in the Glossary of Financial Terms.



## Financial Objectives

BMO's business planning process is rigorous, sets ambitious goals and considers prevailing economic conditions, our risk appetite, our customers' evolving needs and the opportunities available across our lines of business. It includes clear and direct accountability for annual performance that is measured against both internal and external benchmarks and progress toward our strategic priorities.

We have established medium-term financial objectives for certain important performance measures, which are set out below. Medium-term is generally defined as three to five years, and performance is assessed on an adjusted basis. We aim to deliver top-tier total shareholder return and achieve our financial objectives by aligning our operations with, and executing on, our strategic priorities.

These objectives serve as guideposts and they assume a normal business environment. Our ability to meet these objectives in any single period may be adversely affected by extraordinary developments. We recognize that in managing our operations and our exposure to risk, current profitability and our ability to meet these objectives in a single period must be balanced with the need to invest in our businesses for long-term sustainability and future growth.

Our financial objectives and our performance against these objectives are outlined in the table below and described in the sections that follow.

### Financial Objectives and Metrics

| | Financial objectives (adjusted) | Reported basis | | | Adjusted basis (1) | | |
|---|---|---|---|---|---|---|---|
| As at and for the periods ended October 31, 2022 | | 1-year | 3-year (2) | 5-year (2) | 1-year | 3-year (2) | 5-year (2) |
| Total shareholder return (%) | Top-tier | (3.1) | 13.4 | 9.2 | na | na | na |
| Earnings per share growth (%) | 7-10% | 72.7 | 32.1 | 20.4 | 2.1 | 12.0 | 10.2 |
| Average return on equity (%) | 15% or more | 22.9 | 16.0 | 14.7 | 15.2 | 14.0 | 14.1 |
| Operating leverage, net of CCPB (%) (3) | 2% or more | 29.0 | 11.3 | 6.6 | 1.3 | 3.3 | 2.5 |
| Common Equity Tier 1 Ratio (%) | Exceed regulatory requirement | 16.7 | na | na | na | na | na |

(1) Adjusted results and measures in this table are non-GAAP amounts and measures and are discussed in the Non-GAAP and Other Financial Measures section.
(2) The 3-year and 5-year EPS growth rate and operating leverage, net of CCPB, reflect compound annual growth rates (CAGR).
(3) Operating leverage, net of CCPB, on a reported and adjusted basis presented in this table are non-GAAP measures and are discussed in the Non-GAAP and Other Financial Measures section.
na – not applicable

## Total Shareholder Return

The average annual total shareholder return (TSR) is a key measure of shareholder value, and over time, we expect that execution on our strategic priorities will drive value creation for our shareholders. The one-year, three-year and five-year average annual TSR was negative 3.1%, positive 13.4% and positive 9.2%, respectively, all above our Canadian peer group average (excluding BMO) of negative 6.2%, positive 8.9% and positive 7.2%, respectively.

The table below summarizes dividends paid on BMO's common shares over the past five years and the movements in our share price. An investment of $1,000 in BMO common shares made at the beginning of fiscal 2018 would have been worth $1,552 as at October 31, 2022, assuming reinvestment of dividends, for a total return of 55.2%.

Dividends declared per common share in fiscal 2022 totalled $5.44, an increase of $1.20 from $4.24 in the prior year, as the restriction put in place on March 13, 2020 by the Office of the Superintendent of Financial Institutions (OSFI) on dividend increases by federally regulated financial institutions was removed effective November 4, 2021. Dividends paid over a five-year period have increased at an average annual compound rate of approximately 8%.

The **annual total shareholder return (TSR)** represents the average annual total return earned on an investment in BMO common shares made at the beginning of the respective period. The return includes the change in share price and assumes dividends received were reinvested in additional common shares.

### Total Shareholder Return

| For the year ended October 31 | **2022** | 2021 | 2020 | 2019 | 2018 | **3-year CAGR** (1) | **5-year CAGR** (1) |
|---|---|---|---|---|---|---|---|
| Closing market price per common share ($) | **125.49** | 134.37 | 79.33 | 97.50 | 98.43 | **8.8** | **4.9** |
| Dividends paid ($ per share) | **5.11** | 4.24 | 4.21 | 3.99 | 3.72 | **8.6** | **7.7** |
| Dividend yield (%) | **4.3** | 3.2 | 5.3 | 4.2 | 3.8 | **nm** | **nm** |
| Increase (decrease) in share price (%) | **(6.6)** | 69.4 | (18.6) | (0.9) | (0.4) | **nm** | **nm** |
| Total annual shareholder return (%) (2) | **(3.1)** | 75.9 | (14.6) | 3.2 | 3.3 | **13.4** | **9.2** |
| Canadian peer group average (excluding BMO) (3) | **(6.2)** | 56.1 | (11.5) | 11.4 | (1.2) | **8.9** | **7.2** |

(1) Compound annual growth rate (CAGR) expressed as a percentage.
(2) Total annual shareholder return assumes reinvestment of quarterly dividends and therefore does not equal the sum of dividend and share price returns in the table.
(3) As at October 31, 2022, peers: BNS, CIBC, NB, RBC, TD.
nm – not meaningful

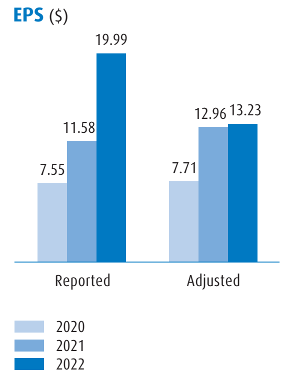
## Earnings per Share Growth

All references to earnings per share (EPS) are to diluted EPS, unless otherwise indicated.

EPS was $19.99 in 2022, an increase of $8.41 or 73% from $11.58 in 2021. Adjusted EPS was $13.23, an increase of $0.27 or 2% from $12.96 in 2021. The increase in EPS primarily reflected higher earnings. Net income available to common shareholders increased 77% year-over-year on a reported basis, and increased 5% on an adjusted basis. The average number of diluted common shares outstanding increased 3% from 2021.

On March 29, 2022, we completed a public offering to finance a portion of the purchase price of the announced acquisition of Bank of the West. The impact of this share offering reduced reported EPS by $0.34 and adjusted EPS by $0.21, or 2%, respectively.

**Earnings per share (EPS)** is calculated by dividing net income, after deducting preferred share dividends and distributions on other equity instruments, by the average number of common shares outstanding. Adjusted EPS is calculated in the same manner, using adjusted net income. Diluted EPS, which is BMO's basis for measuring performance, adjusts for possible conversions of financial instruments into common shares if those conversions would reduce EPS, and is more fully explained in Note 23 of the consolidated financial statements.

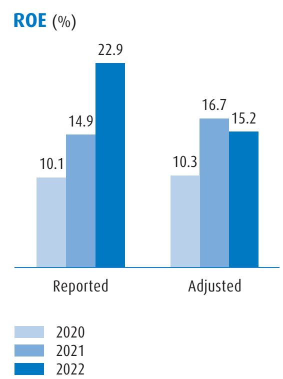


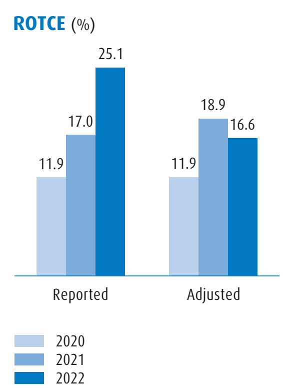

## Return on Equity

Reported return on equity (ROE) was 22.9% in 2022 and adjusted ROE was 15.2%, compared with 14.9% and 16.7%, respectively, in 2021. Reported ROE increased due to higher net income, primarily due to higher revenue in the current year resulting from fair value management actions related to the announced acquisition of Bank of the West. Adjusted ROE decreased, as higher net income was offset by an increase in common equity, partially due to the impact of equity issued related to the announced acquisition of Bank of the West.

There was an increase of $5,796 million in reported net income available to common shareholders and an increase of $401 million in adjusted net income available to common shareholders in the current year. Average common shareholders' equity increased $7.6 billion or 15% from 2021, primarily due to growth in retained earnings and the issuance of common shares, partially offset by a decrease in accumulated other comprehensive income.

The reported return on tangible common equity (ROTCE) was 25.1%, compared with 17.0% in 2021, and adjusted ROTCE was 16.6%, compared with 18.9% in 2021. Book value per share increased 19% from the prior year to $95.60, reflecting the increase in shareholders' equity.




**Return on common shareholders' equity (ROE)** is calculated as net income, less preferred dividends and distributions on other equity instruments, as a percentage of average common shareholders' equity. Common shareholders' equity comprises common share capital, contributed surplus, accumulated other comprehensive income (loss) and retained earnings. Adjusted ROE is calculated using adjusted net income rather than net income.

**Return on tangible common equity (ROTCE)** is calculated as net income available to common shareholders, adjusted for the amortization of acquisition-related intangible assets, as a percentage of average tangible common equity. Adjusted ROTCE is calculated using adjusted net income rather than net income.

# Efficiency Ratio and Operating Leverage

BMO's reported gross efficiency ratio (1) was 48.0%, compared with 57.0% in 2021. On a net revenue basis (2), the reported efficiency ratio was 47.1%, compared with 60.1% in 2021, and the adjusted efficiency ratio was 55.8%, compared with 56.5% in 2021, an improvement of 70 basis points.

Reported operating leverage (1) was positive 19.6%. On a net revenue basis (2), reported operating leverage was positive 29.0%, and adjusted operating leverage was positive 1.3%.

(1) This ratio is calculated using revenue and non-interest expense. Refer to the Revenue section and the Non-Interest Expense section.
(2) Net revenue comprises revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

**Operating leverage** is the difference between revenue and non-interest expense growth rates, and adjusted operating leverage is the difference between adjusted revenue and adjusted non-interest expense growth rates.

**Operating leverage, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB),** is the difference between revenue, net of CCPB (net revenue) and non-interest expense growth rates.

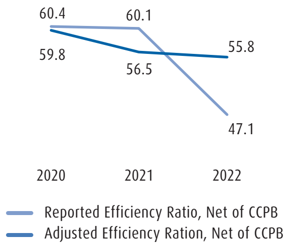
**Adjusted operating leverage, net of CCPB**, is the difference between adjusted revenue, net of CCPB (net revenue), and adjusted non-interest expense growth rates. We evaluate performance using adjusted revenue, net of CCPB.

**Efficiency ratio (or expense-to-revenue ratio)** is a measure of productivity. It is calculated as non-interest expense divided by total revenue (on a taxable equivalent basis in the operating groups), expressed as a percentage.

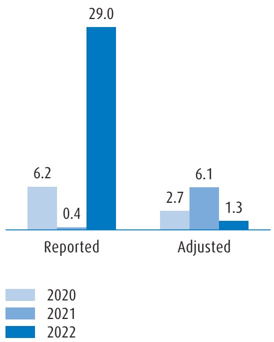
**Efficiency ratio, net of CCPB**, is calculated as non-interest expense divided by total revenue, net of CCPB (on a taxable equivalent basis in the operating groups), expressed as a percentage.

**Adjusted efficiency ratio, net of CCPB**, is calculated in the same manner as efficiency ratio, net of CCPB, utilizing adjusted revenue, net of CCPB, and adjusted non-interest expense.

**Efficiency Ratio, Net of CCPB** (%)




**Operating Leverage, Net of CCPB** (%)




MD&A

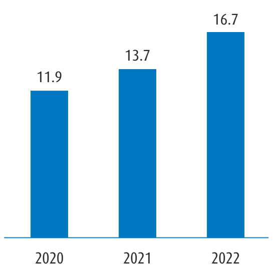
# Common Equity Tier 1 Ratio

Our Common Equity Tier 1 (CET1) Ratio was 16.7% as at October 31, 2022, compared with 13.7% as at October 31, 2021. The CET1 Ratio increased from the end of fiscal 2021, primarily driven by the benefit of fair value management actions related to the announced acquisition of Bank of the West, strong internal capital generation, the issuance of common shares and the benefit of the sale of our EMEA Asset Management business, partially offset by higher risk-weighted assets and a legal provision related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank.

The cumulative impact of the fair value management actions on our CET1 Ratio was approximately 150 basis points.

**Common Equity Tier 1 (CET1) Ratio** is calculated as CET1 capital, which comprises common shareholders' equity, net of deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items (which may include a portion of expected credit loss provisions), divided by risk-weighted assets. The CET1 Ratio is calculated in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.

**CET1 Ratio** (%)




**Caution**

This Financial Objectives and Value Measures section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Supporting a Sustainable and Inclusive Future

BMO has a deep sense of purpose – to be a champion for progress and a catalyst for change. We are leveraging our position as a leading financial services provider in order to create opportunities for our stakeholders and communities to make positive, sustainable change, because we believe that success can and must be mutual. In support of our customers, communities and employees, in 2022 we:

- Deployed more than US$5.5 billion in loans and investments in the past two years as part of BMO EMpower™, exceeding our commitment of US$5 billion over five years to advance an inclusive economic recovery in the United States by addressing key barriers faced by U.S. minority businesses, communities and families.
- Mobilized more than $1.1 billion toward a 10-year, $12 billion commitment to finance affordable housing in Canada.
- Announced a $5 billion commitment to support women business owners in Canada, allocating capital over five years to women entrepreneurs.
- Acted as joint lead manager for the Government of Canada's inaugural Green Bond transaction, a landmark achievement. The $5 billion transaction demonstrates Canada's environmental leadership and acts as a catalyst for the continued development of the sustainable finance market in Canada.
- Continued to support our employees' wellness by providing free access to Headspace®, a platform that is offering preventative and proactive mental wellness resources to all of our employees.

BMO's leadership continues to be recognized in a number of rankings, including:

- Ranked among the most sustainable companies on the Dow Jones Sustainability Indices (DJSI), benchmarks for investors who recognize that sustainable business practices are critical to generating long-term shareholder value. We are one of only five companies in Canada – and one of only two North American banks – included in the DJSI World Index.
- Named as one of *Corporate Knights*' 2022 Global 100 Most Sustainable Corporations in the World and, for the third consecutive year, ranked as North America's most sustainable bank. We ranked in the top quartile for Clean Revenue, as well as for the representation of diversity among our directors and senior leadership.
- Included in *Corporate Knights*' listing of Canada's Best 50 Corporate Citizens, and ranked first among Canadian banks with top-quartile scores in board gender diversity, executive diversity and compensation linked to sustainability. In addition, we received a top-quartile Clean Revenue score, reflecting our commitment to sustainable financing and responsible investing.
- Included for the seventh consecutive year in the Bloomberg Gender-Equality Index (GEI), which recognizes BMO as a global leader in gender inclusion, as well as a leader within the financial sector.
- Recognized by Ethisphere as one of the World's Most Ethical Companies for the fifth consecutive year. We are one of five banks worldwide – one of four banks in the United States and the only bank in Canada – to be recognized in 2022. The award affirms our commitment to doing what's right and operating with transparency, good governance and integrity in support of a thriving economy, a sustainable future and an inclusive society.

**Caution**

This Supporting a Sustainable and Inclusive Future section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Financial Highlights

| (Canadian $ in millions, except as noted) | 2022 | 2021 |
|---|---|---|
| **Summary Income Statement** (1) | | |
| Net interest income | **15,885** | 14,310 |
| Non-interest revenue | **17,825** | 12,876 |
| Revenue | **33,710** | 27,186 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **(683)** | 1,399 |
| Revenue, net of CCPB (2) | **34,393** | 25,787 |
| Provision for credit losses on impaired loans | **502** | 525 |
| Provision for (recovery of) credit losses on performing loans | **(189)** | (505) |
| Total provision for credit losses (PCL) | **313** | 20 |
| Non-interest expense | **16,194** | 15,509 |
| Provision for income taxes | **4,349** | 2,504 |
| Net income | **13,537** | 7,754 |
| Adjusted net income | **9,039** | 8,651 |
| **Common Share Data** ($, except as noted) (1) | | |
| Basic earnings per share | **20.04** | 11.60 |
| Diluted earnings per share | **19.99** | 11.58 |
| Adjusted diluted earnings per share | **13.23** | 12.96 |
| Dividends declared per share | **5.44** | 4.24 |
| Book value per share | **95.60** | 80.18 |
| Closing share price | **125.49** | 134.37 |
| Number of common shares outstanding (in millions) | | |
| End of period | **677.1** | 648.1 |
| Average basic | **664.0** | 647.2 |
| Average diluted | **665.7** | 648.7 |
| Market capitalization ($ billions) | **85.0** | 87.1 |
| Dividend yield (%) | **4.3** | 3.2 |
| Dividend payout ratio (%) | **27.1** | 36.5 |
| Adjusted dividend payout ratio (%) | **41.0** | 32.6 |
| **Financial Measures and Ratios** (%) (1) | | |
| Return on equity | **22.9** | 14.9 |
| Adjusted return on equity | **15.2** | 16.7 |
| Return on tangible common equity | **25.1** | 17.0 |
| Adjusted return on tangible common equity | **16.6** | 18.9 |
| Efficiency ratio | **48.0** | 57.0 |
| Efficiency ratio, net of CCPB (2) | **47.1** | 60.1 |
| Adjusted efficiency ratio, net of CCPB (2) | **55.8** | 56.5 |
| Operating leverage | **19.6** | (1.5) |
| Operating leverage, net of CCPB (2) | **29.0** | 0.4 |
| Adjusted operating leverage, net of CCPB (2) | **1.3** | 6.1 |
| Net interest margin on average earning assets | **1.62** | 1.59 |
| Effective tax rate | **24.3** | 24.4 |
| Adjusted effective tax rate | **22.8** | 22.7 |
| Total PCL-to-average net loans and acceptances | **0.06** | – |
| PCL on impaired loans-to-average net loans and acceptances | **0.10** | 0.11 |
| Liquidity coverage ratio (LCR) (3) | **135** | 125 |
| Net stable funding ratio (NSFR) (3) | **114** | 118 |
| **Balance Sheet and Other Information** (as at October 31, $ millions, except as noted) | | |
| Assets | **1,139,199** | 988,175 |
| Average earning assets | **979,341** | 897,302 |
| Gross loans and acceptances | **567,191** | 474,847 |
| Net loans and acceptances | **564,574** | 472,283 |
| Deposits | **769,478** | 685,631 |
| Common shareholders' equity | **64,730** | 51,965 |
| Total risk-weighted assets (4) | **363,997** | 325,433 |
| Assets under administration | **744,442** | 634,713 |
| Assets under management | **305,462** | 523,270 |
| **Capital Ratios** (%) (4) | | |
| Common Equity Tier 1 Ratio | **16.7** | 13.7 |
| Tier 1 Capital Ratio | **18.4** | 15.4 |
| Total Capital Ratio | **20.7** | 17.6 |
| Leverage Ratio | **5.6** | 5.1 |
| **Foreign Exchange Rates** ($) | | |
| As at Canadian/U.S. dollar | **1.3625** | 1.2376 |
| Average Canadian/U.S. dollar | **1.2918** | 1.2554 |

(1) Adjusted results remove certain items from reported results and are used to calculate our adjusted measures as presented in the above table. Management assesses performance on a reported basis and an adjusted basis, and considers both to be useful. Revenue, net of CCPB, and adjusted results, measures and ratios in this table are non-GAAP. For further information, refer to the Non-GAAP and Other Financial Measures section, and for a composition of non-GAAP amounts, measures and ratios, as well as supplementary financial measures, refer to the Glossary of Financial Terms.

(2) We present revenue, efficiency ratio and operating leverage on a basis that is net of CCPB, which reduces the variability in insurance revenue resulting from changes in fair value that are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB. For further information, refer to the Insurance Claims, Commissions and Changes in Policy Benefits section.

(3) LCR and NSFR are disclosed in accordance with the Liquidity Adequacy Requirements (LAR) Guideline, as set out by OSFI, as applicable.

(4) Capital ratios and risk-weighted assets are disclosed in accordance with the Capital Adequacy Requirements (CAR) Guideline, as set out by OSFI, as applicable.

# Non-GAAP and Other Financial Measures

Results and measures in this document are presented on a GAAP basis. Unless otherwise indicated, all amounts are in Canadian dollars and have been derived from our audited annual consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS). References to GAAP mean IFRS. We use a number of financial measures to assess our performance, as well as the performance of our operating segments, including amounts, measures and ratios that are presented on a non-GAAP basis, as described below. We believe that these non-GAAP amounts, measures and ratios, read together with our GAAP results, provide readers with a better understanding of how management assesses results.

Non-GAAP amounts, measures and ratios do not have standardized meanings under GAAP. They are unlikely to be comparable to similar measures presented by other companies and should not be viewed in isolation from, or as a substitute for, GAAP results.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

Our non-GAAP measures broadly fall into the following categories:

## Adjusted measures and ratios

Management considers both reported and adjusted results and measures to be useful in assessing underlying ongoing business performance. Adjusted results and measures remove certain specified items from revenue, non-interest expense and income taxes, as detailed in the following table. Adjusted results and measures presented in this document are non-GAAP. Presenting results on both a reported basis and an adjusted basis permits readers to assess the impact of certain items on results for the periods presented, and to better assess results excluding those items that may not be reflective of ongoing business performance. As such, the presentation may facilitate readers' analysis of trends. Except as otherwise noted, management's discussion of changes in reported results in this document applies equally to changes in the corresponding adjusted results.

## Measures net of insurance claims, commissions and changes in policy benefit liabilities (CCPB)

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and our efficiency ratio and operating leverage are calculated on a similar basis, as reconciled in the Revenue section. Measures and ratios presented on a basis net of CCPB are non-GAAP. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB. The presentation and discussion of revenue, efficiency ratios and operating leverage on a net basis reduces this variability, which allows for a better assessment of operating results. For more information, refer to the Insurance Claims, Commissions and Changes in Policy Benefit Liabilities section.

## Presenting results on a taxable equivalent basis (teb)

We analyze consolidated revenue on a reported basis. In addition, we analyze revenue on a taxable equivalent basis (teb) at the operating group level, consistent with our Canadian peer group. Revenue and the provision for income taxes in BMO Capital Markets and U.S. P&C are increased on tax-exempt securities to an equivalent pre-tax basis. These adjustments are offset in Corporate Services. Presenting results on a teb basis reflects how our operating groups manage their business and is useful in facilitating comparisons of income between taxable and tax-exempt sources. The effective tax rate is also analyzed on a teb basis for consistency of approach, with the offset to operating segment adjustments recorded in Corporate Services.

## Tangible common equity and return on tangible common equity

Tangible common equity is calculated as common shareholders' equity less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities. Return on tangible common equity is commonly used in the North American banking industry and is meaningful because it measures the performance of businesses consistently, whether they were acquired or developed organically.

## Non-GAAP and Other Financial Measures

| (Canadian $ in millions, except as noted) | 2022 | 2021 | 2020 |
|---|---|---|---|
| **Reported Results** | | | |
| Net interest income | **15,885** | 14,310 | 13,971 |
| Non-interest revenue | **17,825** | 12,876 | 11,215 |
| Revenue | **33,710** | 27,186 | 25,186 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **683** | (1,399) | (1,708) |
| Revenue, net of CCPB | **34,393** | 25,787 | 23,478 |
| Provision for credit losses | **(313)** | (20) | (2,953) |
| Non-interest expense | **(16,194)** | (15,509) | (14,177) |
| Income before income taxes | **17,886** | 10,258 | 6,348 |
| Provision for income taxes | **(4,349)** | (2,504) | (1,251) |
| Net income | **13,537** | 7,754 | 5,097 |
| Diluted EPS ($) | **19.99** | 11.58 | 7.55 |
| **Adjusting Items Impacting Revenue (Pre-tax)** | | | |
| Impact of divestitures (1) | **(21)** | 29 | – |
| Management of fair value changes on the purchase of Bank of the West (2) | **7,713** | – | – |
| Legal provision (3) | **(515)** | – | – |
| Impact of adjusting items on revenue (pre-tax) | **7,177** | 29 | – |
| **Adjusting Items Impacting Non-Interest Expense (Pre-tax)** | | | |
| Acquisition and integration costs (4) | **(326)** | (9) | (14) |
| Amortization of acquisition-related intangible assets (5) | **(31)** | (88) | (121) |
| Impact of divestitures (1) | **(16)** | (886) | – |
| Restructuring (costs) reversals (6) | **–** | 24 | – |
| Legal provision (3) | **(627)** | – | – |
| Impact of adjusting items on non-interest expense (pre-tax) | **(1,000)** | (959) | (135) |
| Impact of adjusting items on reported net income (pre-tax) | **6,177** | (930) | (135) |
| **Adjusting Items Impacting Revenue (After-tax)** | | | |
| Impact of divestitures (1) | **(23)** | 22 | – |
| Management of fair value changes on the purchase of Bank of the West (2) | **5,667** | – | – |
| Legal provision (3) | **(382)** | – | – |
| Impact of adjusting items on revenue (after-tax) | **5,262** | 22 | – |
| **Adjusting Items Impacting Non-Interest Expense (After-tax)** | | | |
| Acquisition and integration costs (4) | **(245)** | (7) | (11) |
| Amortization of acquisition-related intangible assets (5) | **(23)** | (66) | (93) |
| Impact of divestitures (1) | **(32)** | (864) | – |
| Restructuring (costs) reversals (6) | **–** | 18 | – |
| Legal provision (3) | **(464)** | – | – |
| Impact of adjusting items on non-interest expense (after-tax) | **(764)** | (919) | (104) |
| Impact of adjusting items on reported net income (after-tax) | **4,498** | (897) | (104) |
| Impact on diluted EPS ($) | **6.76** | (1.38) | (0.16) |
| **Adjusted Results** | | | |
| Net interest income | **16,352** | 14,310 | 13,971 |
| Non-interest revenue | **10,181** | 12,847 | 11,215 |
| Revenue | **26,533** | 27,157 | 25,186 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **683** | (1,399) | (1,708) |
| Revenue, net of CCPB | **27,216** | 25,758 | 23,478 |
| Provision for credit losses | **(313)** | (20) | (2,953) |
| Non-interest expense | **(15,194)** | (14,550) | (14,042) |
| Income before income taxes | **11,709** | 11,188 | 6,483 |
| Provision for income taxes | **(2,670)** | (2,537) | (1,282) |
| Net income | **9,039** | 8,651 | 5,201 |
| Diluted EPS ($) | **13.23** | 12.96 | 7.71 |

(1) Reported net income included the impact of divestitures related to the sale of our EMEA Asset Management business and our Private Banking business in Hong Kong and Singapore. Fiscal 2022 reported net income included a gain of $6 million ($8 million pre-tax) related to the transfer of certain U.S. asset management clients and a $29 million (pre-tax and after-tax) loss related to foreign currency translation reclassified from accumulated other comprehensive income, both recorded in non-interest revenue, and expenses of $32 million ($16 million pre-tax), including taxes of $22 million on closing of the sale of our EMEA Asset Management business recorded in non-interest expense. Fiscal 2021 reported net income included a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense. These amounts were recorded in Corporate Services.

(2) Fiscal 2022 reported net income included revenue of $5,667 million ($7,713 million pre-tax) related to the announced acquisition of Bank of the West resulting from the management of the impact of interest rate changes between the announcement and closing on its fair value and goodwill, comprising $7,665 million of pre-tax mark-to-market gains on certain interest rate swaps recorded in non-interest trading revenue and $48 million of pre-tax non-trading interest income on a portfolio of primarily U.S. treasury securities recorded in net interest income. These amounts were recorded in Corporate Services. For further information on this acquisition, refer to the Significant Events section.

(3) Fiscal 2022 reported net income included a legal provision of $846 million ($1,142 million pre-tax) related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank, comprising interest expense of $515 million pre-tax and non-interest expense of $627 million pre-tax, including legal fees of $22 million. These amounts were recorded in Corporate Services. For further information, refer to the Provisions and Contingent Liabilities section in Note 24 of the consolidated financial statements.

(4) Fiscal 2022 reported net income included acquisition and integration costs of $237 million ($316 million pre-tax) related to the announced acquisition of Bank of the West recorded in non-interest expense in Corporate Services. In addition, reported net income included acquisition and integration costs of $8 million ($10 million pre-tax) related to KGS-Alpha and Clearpool in fiscal 2022, $7 million ($9 million pre-tax) in fiscal 2021, and $11 million ($14 million pre-tax) in fiscal 2020 recorded in non-interest expense in BMO Capital Markets.

(5) Amortization of acquisition-related intangible assets of $23 million ($31 million pre-tax) in fiscal 2022, $66 million ($88 million pre-tax) in fiscal 2021, and $93 million ($121 million pre-tax) in fiscal 2020 were recorded in non-interest expense in the related operating group.

(6) Fiscal 2021 reported net income included a partial reversal of $18 million ($24 million pre-tax) of restructuring charges related to severance recorded in 2019 in non-interest expense, in Corporate Services.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Summary of Reported and Adjusted Results by Operating Segment

| (Canadian $ in millions, except as noted) | Canadian P&C | U.S. P&C | Total P&C | BMO Wealth Management | BMO Capital Markets | Corporate Services | Total Bank | U.S. Segment (1) (US$ in millions) |
|---|---|---|---|---|---|---|---|---|
| **2022** | | | | | | | | |
| Reported net income | **3,826** | **2,497** | **6,323** | **1,251** | **1,772** | **4,191** | **13,537** | **6,079** |
| Acquisition and integration costs | **–** | **–** | **–** | **–** | **8** | **237** | **245** | **185** |
| Amortization of acquisition-related intangible assets | **1** | **5** | **6** | **3** | **14** | **–** | **23** | **17** |
| Impact of divestitures | **–** | **–** | **–** | **–** | **–** | **55** | **55** | **(45)** |
| Management of fair value changes on the purchase of Bank of the West | **–** | **–** | **–** | **–** | **–** | **(5,667)** | **(5,667)** | **(4,312)** |
| Legal provision | **–** | **–** | **–** | **–** | **–** | **846** | **846** | **621** |
| Adjusted net income (loss) | **3,827** | **2,502** | **6,329** | **1,254** | **1,794** | **(338)** | **9,039** | **2,545** |
| **2021** | | | | | | | | |
| Reported net income (loss) | 3,288 | 2,176 | 5,464 | 1,382 | 2,120 | (1,212) | 7,754 | 2,593 |
| Acquisition and integration costs | – | – | – | – | 7 | – | 7 | 6 |
| Amortization of acquisition-related intangible assets | 1 | 24 | 25 | 24 | 17 | – | 66 | 37 |
| Impact of divestitures | – | – | – | – | – | 842 | 842 | 27 |
| Restructuring costs (reversals) | – | – | – | – | – | (18) | (18) | (13) |
| Adjusted net income (loss) | 3,289 | 2,200 | 5,489 | 1,406 | 2,144 | (388) | 8,651 | 2,650 |

(1) U.S. segment reported and adjusted results comprise net income recorded in U.S. P&C and our U.S. operations in BMO Wealth Management, BMO Capital Markets and Corporate Services.

Refer to footnotes (1) to (6) in the Non-GAAP and Other Financial Measures table for further information on adjusting items.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Net Revenue, Efficiency Ratio and Operating Leverage

| (Canadian $ in millions, except as noted) For the year ended October 31 | 2022 | 2021 | 2020 |
|---|---|---|---|
| **Reported** | | | |
| Revenue | **33,710** | 27,186 | 25,186 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **(683)** | 1,399 | 1,708 |
| Revenue, net of CCPB | **34,393** | 25,787 | 23,478 |
| Non-interest expense | **16,194** | 15,509 | 14,177 |
| Efficiency ratio (%) | **48.0** | 57.0 | 56.3 |
| Efficiency ratio, net of CCPB (%) | **47.1** | 60.1 | 60.4 |
| Revenue growth (%) | **24.0** | 7.9 | (1.2) |
| Revenue growth, net of CCPB (%) | **33.4** | 9.8 | 3.1 |
| Non-interest expense growth (%) | **4.4** | 9.4 | (3.1) |
| Operating leverage (%) | **19.6** | (1.5) | 1.9 |
| Operating leverage, net of CCPB (%) | **29.0** | 0.4 | 6.2 |
| **Adjusted** | | | |
| Revenue | **26,533** | 27,157 | 25,186 |
| Impact of adjusting items on revenue | **(7,177)** | (29) | – |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **(683)** | 1,399 | 1,708 |
| Revenue, net of CCPB | **27,216** | 25,758 | 23,478 |
| Impact of adjusting items on non-interest expense | **(1,000)** | (959) | (135) |
| Non-interest expense | **15,194** | 14,550 | 14,042 |
| Efficiency ratio (%) | **57.3** | 53.6 | 55.8 |
| Efficiency ratio, net of CCPB (%) | **55.8** | 56.5 | 59.8 |
| Revenue growth, net of CCPB (%) | **5.7** | 9.7 | 3.0 |
| Non-interest expense growth (%) | **4.4** | 3.6 | 0.3 |
| Operating leverage, net of CCPB (%) | **1.3** | 6.1 | 2.7 |

Refer to footnotes (1) to (6) in the Non-GAAP and Other Financial Measures table for further information on adjusting items.

## Return on Equity and Return on Tangible Common Equity

| (Canadian $ in millions, except as noted)<br>For the year ended October 31 | **2022** | 2021 | 2020 |
|---|---|---|---|
| Reported net income | **13,537** | 7,754 | 5,097 |
| Dividends on preferred shares and distributions on other equity instruments | **(231)** | (244) | (247) |
| Net income available to common shareholders (A) | **13,306** | 7,510 | 4,850 |
| After-tax amortization of acquisition-related intangible assets | **23** | 66 | 93 |
| Net income available to common shareholders after adjusting for amortization of acquisition-related intangible assets (B) | **13,329** | 7,576 | 4,943 |
| After-tax impact of other adjusting items (1) | **(4,521)** | 831 | 11 |
| Adjusted net income available to common shareholders (C) | **8,808** | 8,407 | 4,954 |
| Average common shareholders' equity (D) | **58,078** | 50,451 | 48,235 |
| Return on equity (%) (= A/D) | **22.9** | 14.9 | 10.1 |
| Adjusted return on equity (%) (= C/D) | **15.2** | 16.7 | 10.3 |
| Average tangible common equity (E) (2) | **53,148** | 44,505 | 41,484 |
| Return on tangible common equity (%) (= B/E) | **25.1** | 17.0 | 11.9 |
| Adjusted return on tangible common equity (%) (= C/E) | **16.6** | 18.9 | 11.9 |

(1) Refer to footnotes (1) to (6) in the Non-GAAP and Other Financial Measures table for further information on adjusting items.

(2) Average tangible common equity is average common shareholders' equity (D above) adjusted for goodwill of $5,051 million ($5,836 million in 2021 and $6,530 million in 2020) and acquisition-related intangible assets of $130 million ($381 million in 2021 and $495 million in 2020), net of related deferred tax liabilities of $251 million ($271 million in 2021 and $274 million in 2020).

Capital is allocated to the operating segments based on the amount of regulatory capital required to support business activities. Unallocated capital is reported in Corporate Services. Capital allocation methodologies are reviewed annually.

## Return on Equity by Operating Segment

| | **2022** | | | | | | |
|---|---|---|---|---|---|---|---|
| (Canadian $ in millions, except as noted) | **Canadian P&C** | **U.S. P&C** | **Total P&C** | **BMO Wealth Management** | **BMO Capital Markets** | **Corporate Services** | **Total Bank** |
| **Reported** | | | | | | | |
| Net income available to common shareholders | **3,783** | **2,461** | **6,244** | **1,243** | **1,732** | **4,087** | **13,306** |
| Total average common equity | **11,798** | **13,815** | **25,613** | **5,282** | **11,602** | **15,581** | **58,078** |
| Return on equity (%) | **32.1** | **17.8** | **24.4** | **23.5** | **14.9** | **na** | **22.9** |
| **Adjusted** (1) | | | | | | | |
| Net income available to common shareholders | **3,784** | **2,466** | **6,250** | **1,246** | **1,754** | **(442)** | **8,808** |
| Total average common equity | **11,798** | **13,815** | **25,613** | **5,282** | **11,602** | **15,581** | **58,078** |
| Return on equity (%) | **32.1** | **17.8** | **24.4** | **23.6** | **15.1** | **na** | **15.2** |

| | 2021 | | | | | | |
|---|---|---|---|---|---|---|---|
| (Canadian $ in millions, except as noted) | Canadian P&C | U.S. P&C | Total P&C | BMO Wealth Management | BMO Capital Markets | Corporate Services | Total Bank |
| **Reported** | | | | | | | |
| Net income available to common shareholders | 3,246 | 2,136 | 5,382 | 1,374 | 2,081 | (1,327) | 7,510 |
| Total average common equity | 11,147 | 13,522 | 24,669 | 5,899 | 10,913 | 8,970 | 50,451 |
| Return on equity (%) | 29.1 | 15.8 | 21.8 | 23.3 | 19.1 | na | 14.9 |
| **Adjusted** (1) | | | | | | | |
| Net income available to common shareholders | 3,247 | 2,160 | 5,407 | 1,398 | 2,105 | (503) | 8,407 |
| Total average common equity | 11,147 | 13,522 | 24,669 | 5,899 | 10,913 | 8,970 | 50,451 |
| Return on equity (%) | 29.1 | 16.0 | 21.9 | 23.7 | 19.3 | na | 16.7 |

(1) Refer to footnotes (1) to (6) in the Non-GAAP and Other Financial Measures table for further information on adjusting items.

na – not applicable

Certain comparative figures have been reclassified to conform with the current year's presentation.

# Significant Events

During the first quarter of 2022, we completed the sale of our EMEA Asset Management business to Ameriprise Financial, Inc., including the transfer of certain U.S. asset management clients, and on April 30, 2021, we completed the sale of our Private Banking business in Hong Kong and Singapore to J. Safra Sarasin Group. Collectively, we refer to these transactions as "divestitures". The divestitures reduced net revenue and expenses by approximately 3% and 4%, respectively, on both a reported and an adjusted basis, compared with the prior year.

On December 20, 2021, we announced the signing of a definitive agreement with BNP Paribas to acquire Bank of the West and its subsidiaries. Under the terms of the agreement, we will pay a cash purchase price of US$16.3 billion, or US$13.4 billion net of an estimated US$2.9 billion of excess capital (at closing) at Bank of the West. The transaction, which is expected to close by the end of the first calendar quarter of 2023, is subject to customary closing conditions, including regulatory approvals. We expect to fund the transaction primarily with excess capital, reflecting our strong capital position, including the added impact of the 20,843,750 common shares issued for $3,106 million on March 29, 2022, and anticipated capital generation.

On closing, the acquisition is expected to add approximately US$92 billion of assets, US$59 billion of loans and US$76 billion of deposits to our consolidated balance sheet. These amounts are based on the financial position and results of Bank of the West as at the period ended September 30, 2022.

This acquisition aligns with our strategic, financial and cultural objectives, and meaningfully accelerates our U.S. growth. Building on the strength of our performance and our integrated North American foundation, the acquisition will bring nearly 1.8 million customers to BMO and will further extend our banking presence through an additional 503 branches and commercial and wealth offices in key U.S. markets. After closing, our footprint will expand to 32 states, including an immediate scaled entry into the attractive California market, where we expect to deliver a highly competitive offering to new growth markets, combining the strength of our digital banking platform and our strong banking team to generate good customer growth.

A signature strength of Bank of the West is the deep relationships formed between its customers, its employees, and the communities they have served for over 100 years. As part of this transaction, we do not plan to close Bank of the West branches, and we are committed to retaining front-line Bank of the West branch employees.

Leveraging our deep integration experience and proven track record in U.S. expansion, we remain confident that we can achieve annual pre-tax cost synergies of approximately US$670 million (C$860 million) through operational efficiencies across our combined businesses. Integration planning is underway and is being overseen by a dedicated joint integration management office.

Under IFRS, the purchase price will be allocated to the identifiable assets and liabilities of Bank of the West at closing, on the basis of their relative fair values, with the difference recorded as goodwill. The fair value/par value differences, referred to as the fair value mark, will be amortized to income over the estimated life of an underlying asset (liability). Intangible assets identified, including the core deposit intangible related to non-maturity deposits, will be amortized over their estimated life. The fair value of fixed rate loans, securities and deposits is largely dependent on interest rates. If interest rates increase, the fair value of the acquired fixed rate assets (in particular, loans and securities) will decrease, resulting in higher goodwill. If interest rates decrease, the opposite would be true. Conversely, the fair value of floating rate assets (liabilities) and non-maturity deposits approximate par, providing no natural fair value change offset. Changes in goodwill relative to our original assumptions announced on December 20, 2021 will impact capital ratios at closing, because goodwill is treated as a deduction from capital under the Office of the Superintendent of Financial Institutions (OSFI) Basel III rules. In addition, given that the purchase price of the acquisition is in U.S. dollars, any change in foreign exchange translation between the Canadian dollar relative to the U.S. dollar between the announcement and the closing of the acquisition will result in a change to the Canadian dollar equivalent goodwill.

We are proactively managing exposure to capital from changes in fair value of the assets and liabilities of Bank of the West at closing. As part of our fair value management actions, we entered into interest rate swaps that increase in value as interest rates rise, resulting in mark-to-market gains recorded in trading revenue. These swaps were largely offset from an interest rate risk perspective through the purchase of a portfolio of matched-duration U.S. treasuries and other balance sheet instruments that generate net interest income. Together, these transactions aim to mitigate the effects of any changes in goodwill arising from changes in interest rates between the announcement and closing of the acquisition, with the associated revenue (loss) treated as an adjusting item. In addition, BMO entered into forward contracts, which qualify as accounting hedges, to mitigate the effects of changes in the Canadian dollar equivalent of the purchase price on closing. Changes in the fair value of these forward contracts are recorded in other comprehensive income (OCI) until closing of the transaction.

The impact of the fair value management actions on our results was treated as an adjusting item. The current year included $7,713 million pre-tax ($5,667 million after-tax) revenue related to the management of interest rate changes, comprising $7,665 million of mark-to-market gains on certain interest rate swaps recorded in non-interest revenue, as well as $48 million interest income on a portfolio of U.S. treasuries and other balance sheet instruments recorded in net interest income.

The cumulative impact on our Common Equity Tier 1 Ratio related to these fair value management actions was approximately 150 basis points. In addition, changes in the fair value of the forward contracts increased OCI by $638 million in 2022. The impact of the stronger U.S. dollar increased OCI by 5%.

**Caution**

This Significant Events section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Economic Developments and Outlook

## Economic Developments in 2022 and Outlook for 2023 (1)

After reaching 5.0% in 2021, growth in Canada's real gross domestic product (GDP) is anticipated to slow to an estimated rate of 3.5% in 2022. Growth remained robust in the first half of the year, as economic activity rebounded following the easing of pandemic restrictions. The trade balance benefitted from rising commodity prices and consumer spending was supported by high levels of household savings. However, the momentum in the economy has been halted by rapidly rising interest rates, high inflation, supply-chain disruptions and weakening global demand. Housing sales have plunged below pre-pandemic levels, while prices are retreating from the record levels of the previous two years. With headwinds growing, real GDP is expected to contract modestly in early 2023 and to register no growth for the year. In order to dampen demand and control inflation, the Bank of Canada has raised its overnight lending rate by 350 basis points to 3.75% since March 2022, the most aggressive round of tightening in nearly three decades. The policy rate will likely rise to 4.5% in early 2023, with the intent of maintaining sustained downward pressure on inflation. A contracting economy is expected to lift the unemployment rate from 5.2% in October 2022 to 6.5% by late 2023, easing pressure on wages and prices. After reaching four-decade highs above 8% year-over-year in the summer, consumer price index (CPI) inflation is expected to decline but remain elevated at around 3% in late 2023. The strong industry-wide growth in residential mortgage balances seen in the first half of 2022 is projected to moderate to the low single digits in 2023, as housing market activity slows and prices decline. Consumer credit balances (excluding mortgages) have been restrained by higher borrowing costs and elevated household savings, and are anticipated to rise only modestly in the year ahead. Growth in non-financial corporate credit is expected to decelerate in response to rising interest rates and a slowing economy, as businesses draw on their elevated cash balances.

After rebounding strongly in 2021, growth in U.S. real GDP likely slowed sharply to an estimated rate of 1.9% in 2022 due to rising interest rates, high inflation, a strong U.S. dollar and supply-chain disruptions. Despite elevated household savings and strong gains in employment and wages, real consumer spending growth has slowed. Business investment has also slowed in response to a deteriorating economic outlook. Housing market activity has fallen sharply amid the worst affordability levels in three decades. Real GDP is anticipated to contract modestly in the first half of 2023 and to register no growth for the year, largely in response to tighter monetary policy and weaker financial conditions. The economic slump is anticipated to raise the unemployment rate from 3.7% in October 2022 to 5.0% by late 2023. In line with a partial retreat in oil prices, CPI inflation likely peaked at above 9% year-over-year in the summer. However, it is anticipated to decline slowly and remain above 3% in late 2023. After raising its policy rate by 375 basis points from March to November 2022, the Federal Reserve is projected to lift it by an additional 100 basis points to a range of 4.75% to 5.0% by spring 2023. Earlier strong growth in industry-wide residential mortgage balances is anticipated to moderate as housing market activity slows. Consumer credit balances have risen recently, as inflation has strained household budgets, but growth is expected to decelerate as a result of rising interest rates and a higher unemployment rate. Non-financial corporate credit growth strengthened earlier this year as companies took advantage of still-low interest rates, but is projected to weaken quickly as interest rates rise, economic growth slows and businesses draw on their elevated cash balances.

The economic outlook is subject to several risks that could lead to a severe downturn in Canada and the United States. These include persistent high inflation and significant further increases in interest rates, an escalation of the conflict in Ukraine, geopolitical tensions between the United States and China, and emerging new strains of COVID-19. A material housing market correction could also occur if monetary policy becomes overly restrictive in an effort to control inflation.

**Caution**

This Economic Developments and Outlook section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

(1) All time periods in this section refer to the calendar year rather than BMO's fiscal year.

# 2022 Financial Performance Review

This section provides a review of BMO's enterprise financial performance for 2022 that focuses on the Consolidated Statement of Income in BMO's audited annual consolidated financial statements. A review of the operating groups' strategies and performance follows the enterprise review.

We use a number of financial measures to assess our performance, as well as the performance of our operating segments, including amounts, measures and ratios that are presented on a non-GAAP basis. We believe that these non-GAAP amounts, measures and ratios, read together with our GAAP results, provide readers with a better understanding of how management assesses results.

Non-GAAP amounts, measures and ratios do not have standardized meanings under GAAP. They are unlikely to be comparable to similar measures presented by other companies and should not be viewed in isolation from, or as a substitute for, GAAP results.

Further discussion of the non-GAAP amounts, measures and ratios is provided in the Non-GAAP and Other Financial Measures section.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

## Foreign Exchange

The Canadian dollar equivalents of BMO's U.S. segment results that are denominated in U.S. dollars increased relative to 2021 due to changes in the Canadian/U.S. dollar exchange rate. The table below indicates the relevant average Canadian/U.S. dollar exchange rates and the impact of changes in those rates on BMO's U.S. segment results. References in this document to the impact of the U.S. dollar do not include U.S. dollar-denominated amounts recorded outside of BMO's U.S. segment.

Economically, our U.S. dollar income stream was not hedged against the risk of changes in foreign exchange rates during 2022 and 2021. Changes in exchange rates will affect future results measured in Canadian dollars, and the impact on those results is a function of the periods in which revenue, expenses, provisions for (or recoveries of) credit losses and income taxes arise.

Refer to the Enterprise-Wide Capital Management section for a discussion of the impact that changes in foreign exchange rates can have on BMO's capital position.

### Effects of Changes in Exchange Rates on BMO's U.S. Segment Reported and Adjusted Results

| (Canadian $ in millions, except as noted) | 2022 vs. 2021 |
|---|---|
| Canadian/U.S. dollar exchange rate (average) | |
| 2022 | **1.2918** |
| 2021 | **1.2554** |
| **Effects on U.S. segment reported results** | |
| Increased (Decreased) net interest income | **166** |
| Increased (Decreased) non-interest revenue | **102** |
| Increased (Decreased) total revenue | **268** |
| Decreased (Increased) provision for credit losses | **7** |
| Decreased (Increased) non-interest expense | **(153)** |
| Decreased (Increased) provision for income taxes | **(27)** |
| Increased (Decreased) net income | **95** |
| Impact on earnings per share ($) | **0.14** |
| **Effects on U.S. segment adjusted results** | |
| Increased (Decreased) net interest income | **166** |
| Increased (Decreased) non-interest revenue | **102** |
| Increased (Decreased) total revenue | **268** |
| Decreased (Increased) provision for credit losses | **7** |
| Decreased (Increased) non-interest expense | **(150)** |
| Decreased (Increased) provision for income taxes | **(28)** |
| Increased (Decreased) net income | **97** |
| Impact on earnings per share ($) | **0.15** |

Adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

# Net Income

Reported net income was $13,537 million, an increase of $5,783 million or 75% from the prior year, and adjusted net income was $9,039 million, an increase of $388 million or 4%.

Adjusted results in the current year excluded the impact of the announced acquisition of Bank of the West, comprising revenue of $5,667 million ($7,713 million pre-tax) related to management of the impact of interest rate changes between the announcement and closing on its fair value and goodwill, and related acquisition and integration costs of $237 million ($316 million pre-tax). In addition, the current year excluded a legal provision of $846 million ($1,142 million pre-tax) related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank, the impact of divestitures related to the sale of our EMEA Asset Management business and the transfer of certain U.S. asset management clients of $55 million, comprising a gain of $6 million ($8 million pre-tax), a loss related to foreign currency translation of $29 million pre-tax and after-tax that was reclassified from accumulated other comprehensive income to non-interest revenue, and expenses of $32 million ($16 million pre-tax), including taxes of $22 million on the closing of the sale. Adjusted results in the prior year excluded a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions, as well as an $18 million ($24 million pre-tax) partial reversal of restructuring charges related to severance recorded in 2019. Adjusted net income in both years excluded the amortization of acquisition-related intangible assets and acquisition and integration costs. The amortization of acquisition-related intangible assets was $23 million ($31 million pre-tax) and $66 million ($88 million pre-tax) in 2022 and 2021, respectively. Acquisition and integration costs related to KGS-Alpha and Clearpool were $8 million ($10 million pre-tax) and $7 million ($9 million pre-tax) in 2022 and 2021, respectively. For further information, refer to the Non-GAAP and Other Financial Measures section.

The increase in reported net income was driven by the impact of fair value management actions in the current year. Adjusted results were primarily driven by higher net revenue, partially offset by higher expenses and a higher provision for credit losses. Net income increased in our P&C businesses, and decreased in BMO Capital Markets and BMO Wealth Management. On a reported basis, Corporate Services recorded net income compared with a net loss in the prior year, and on an adjusted basis recorded a lower net loss compared with the prior year.

Canadian P&C reported net income increased $538 million or 16% from the prior year, driven by a 12% increase in revenue, with higher net interest income and non-interest revenue and a lower provision for credit losses compared with the prior year, partially offset by higher expenses. U.S. P&C reported net income increased $321 million or 15% from the prior year, primarily driven by a 14% increase in revenue due to higher net interest income, partially offset by higher expenses and a higher provision for credit losses compared with the prior year. BMO Wealth Management reported net income decreased $131 million or 9%, in part due to divestitures, with higher underlying revenue more than offset by higher underlying expenses. BMO Capital Markets reported net income decreased $348 million or 16%, with higher revenue more than offset by higher expenses and a lower recovery of the provision for credit losses compared with the prior year. Corporate Services reported net income was $4,191 million and adjusted net loss was $338 million, compared with a reported net loss of $1,212 million and an adjusted net loss of $388 million in the prior year.

Further discussion is provided in the 2022 Operating Groups Performance Review section.

For further information on non-GAAP amounts, measures and ratios in this Net Income section, refer to the Non-GAAP and Other Financial Measures section.

# Revenue

Reported revenue was $33,710 million, an increase of $6,524 million or 24% from the prior year, and adjusted revenue was $26,533 million, a decrease of $624 million or 2%. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), reported net revenue was $34,393 million, an increase of $8,606 million or 33% from the prior year, and adjusted net revenue was $27,216 million, an increase of $1,458 million or 6%.

Adjusted revenue in the current year excluded $7,713 million related to fair value management actions, comprising $7,665 million of pre-tax mark-to-market gains on certain interest rate swaps recorded in non-interest trading revenue and $48 million of non-trading interest income on a portfolio of primarily U.S. treasury securities. In addition, adjusted revenue excluded interest expense of $515 million related to a legal provision. Both years excluded the impact of divestitures. The stronger U.S. dollar increased revenue growth by 1%.

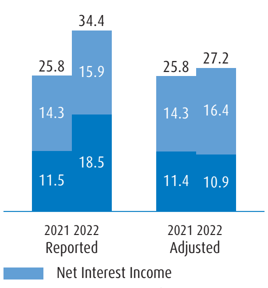
Revenue increased in Canadian P&C, due to higher net interest income and non-interest revenue, and in U.S. P&C, primarily due to higher net interest income and the impact of the stronger U.S. dollar. BMO Wealth Management revenue decreased, as underlying revenue growth was more than offset by divestitures, while BMO Capital Markets revenue increased 1%, with higher Global Markets revenue offset by lower Investment and Corporate Banking revenue. Corporate Services reported revenue increased, due to fair value management actions, partially offset by a legal provision, while adjusted revenue decreased compared with the prior year.

BMO analyzes revenue at the consolidated level based on GAAP revenue as reported in the consolidated financial statements, and on an adjusted basis. Operating group revenue is presented on a taxable equivalent basis (teb), with revenue and the provision for income taxes increased on tax-exempt securities to an equivalent pre-tax basis. These teb adjustments for 2022 totalled $270 million, compared with $315 million in 2021.

Further discussion is provided in the 2022 Operating Groups Performance Review section.

For further information on non-GAAP amounts, measures and ratios, and results presented on a net revenue basis in this Revenue section, refer to the Non-GAAP and Other Financial Measures section.

**Revenue, Net of CCPB***
($ billions)




*Numbers may not add due to rounding.

**Net interest income** comprises earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits. Net interest income, excluding trading, is presented on a basis that excludes trading-related interest income.

**Net interest margin** is the ratio of net interest income to average earning assets, expressed as a percentage or in basis points. Net interest margin, excluding trading, is computed in the same manner, excluding trading-related interest income and earning assets.

**Net non-interest revenue** is non-interest revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

**Average earning assets** represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans over a one-year period.

**Taxable equivalent basis (teb)** – operating group revenue is presented on a taxable equivalent basis (teb). Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. This adjustment is offset in Corporate Services.

## Revenue

| (Canadian $ in millions, on a pre-tax basis)<br>For the year ended October 31 | **2022** | 2021 | **Change from 2021 (%)** |
|---|---|---|---|
| Net interest income | **15,885** | 14,310 | **11** |
| Non-interest revenue | **17,825** | 12,876 | **38** |
| Total revenue | **33,710** | 27,186 | **24** |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) (1) | **(683)** | 1,399 | **(+100)** |
| Revenue, net of CCPB (1) | **34,393** | 25,787 | **33** |
| Impact of divestitures (2) | **21** | (29) | **na** |
| Management of fair value changes on the purchase of Bank of the West (3) | **(7,713)** | – | **na** |
| Legal provision (4) | **515** | – | **na** |
| Impact of adjusting items on revenue | **(7,177)** | (29) | **na** |
| Adjusted revenue (2) (3) (4) | **26,533** | 27,157 | **(2)** |
| Adjusted revenue, net of CCPB (1) (2) (3) (4) | **27,216** | 25,758 | **6** |

(1) Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB. The presentation of revenue on a basis net of CCPB reduces variability in results, which allows for a better discussion of operating results. For further information, refer to the Insurance Claims, Commissions and Changes in Policy Benefits section.

(2) Reported revenue included the impact of divestitures related to the sale of our EMEA Asset Management business and our Private Banking business in Hong Kong and Singapore. Fiscal 2022 included a gain of $8 million related to the transfer of certain U.S. asset management clients and a $29 million (pre-tax and after-tax) loss related to foreign currency translation reclassified from accumulated other comprehensive income to non-interest revenue. Fiscal 2021 included a $29 million net gain on the sale of our Private Banking business in Hong Kong and Singapore. These amounts were recorded in Corporate Services.

(3) Fiscal 2022 reported revenue included $7,713 million related to the announced acquisition of Bank of the West resulting from the management of the impact of interest rate changes between the announcement and closing on its fair value and goodwill, comprising $7,665 million of pre-tax mark-to-market gains on certain interest rate swaps recorded in non-interest trading revenue and $48 million of pre-tax non-trading interest income related to fair value management actions recorded in net interest income. These amounts were recorded in Corporate Services. For further information on this acquisition, refer to the Significant Events section.

(4) Fiscal 2022 reported revenue included interest expense of $515 million for a legal provision related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank, recorded in interest expense in Corporate Services. For further information, refer to the Provisions and Contingent Liabilities section in Note 24 of the consolidated financial statements.

Revenue, net of CCPB, and adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

na – not applicable

## Net Interest Income

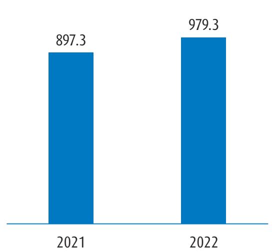
Reported net interest income was $15,885 million, an increase of $1,575 million or 11% from the prior year, and adjusted net interest income was $16,352 million, an increase of $2,042 million or 14%. Adjusted net interest revenue excluded interest expense of $515 million related to the legal provision and non-trading interest income of $48 million related to fair value management actions.

Net interest income increased across all operating groups due to strong balance growth and higher net interest margins reflecting the impact of the higher interest rate environment, partially offset by lower trading-related net interest income, which decreased $181 million.

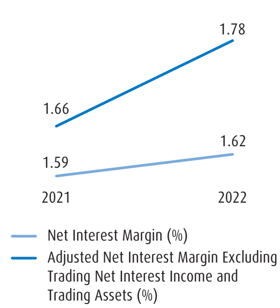
Average earning assets were $979.3 billion, an increase of $82 billion or 9%, primarily due to loan growth and higher securities balances.

BMO's overall reported net interest margin of 162 basis points increased 3 basis points from the prior year, primarily due to higher net interest margins in our P&C businesses, partially offset by the net impact of the adjusting items, as well as trading-related activities. Adjusted net interest margin, excluding trading-related interest income and earning assets, of 178 basis points increased 12 basis points.

**Average Earning Assets**
($ billions)




**Net Interest Margin** (%)



## Change in Net Interest Income, Average Earning Assets and Net Interest Margin (1)

| (Canadian $ in millions, except as noted) For the year ended October 31 | Net interest income (teb) (2) 2022 | 2021 | Change % | Average earning assets (3) 2022 | 2021 | Change % | Net interest margin (in basis points) 2022 | 2021 | Change |
|---|---|---|---|---|---|---|---|---|---|
| Canadian P&C | **7,449** | 6,561 | **14** | **278,022** | 248,215 | **12** | **268** | 264 | **4** |
| U.S. P&C | **5,037** | 4,268 | **18** | **138,094** | 122,166 | **13** | **365** | 349 | **16** |
| Personal and Commercial Banking (P&C) | **12,486** | 10,829 | **15** | **416,116** | 370,381 | **12** | **300** | 292 | **8** |
| All other operating groups and Corporate Services (4) | **3,399** | 3,481 | **(2)** | **563,225** | 526,921 | **7** | **na** | na | **na** |
| Total reported | **15,885** | 14,310 | **11** | **979,341** | 897,302 | **9** | **162** | 159 | **3** |
| Total adjusted | **16,352** | 14,310 | **14** | **979,341** | 897,302 | **9** | **167** | 159 | **8** |
| Trading net interest income and earning assets | **1,672** | 1,853 | **(10)** | **153,875** | 144,865 | **6** | **na** | na | **na** |
| Total excluding trading net interest income and earning assets | **14,213** | 12,457 | **14** | **825,466** | 752,437 | **10** | **172** | 166 | **6** |
| Total adjusted excluding trading net interest income and earning assets | **14,680** | 12,457 | **18** | **825,466** | 752,437 | **10** | **178** | 166 | **12** |
| U.S. P&C (US$ in millions) | **3,893** | 3,400 | **15** | **106,829** | 97,321 | **10** | **364** | 349 | **15** |

(1) Adjusted results and ratios in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Operating group revenue is presented on a taxable equivalent basis (teb) in net interest income and is non-GAAP. For further information, refer to the Non-GAAP and Other Financial Measures and How BMO Reports Operating Group Results sections.
(3) Average earning assets represents the daily average balance of deposits with central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans, over a one-year period.
(4) For further information on net interest income for these other operating groups and Corporate Services, refer to the Review of Operating Groups' Performance section.

Certain comparative figures have been reclassified to conform with the current year's presentation.

na – not applicable

## Non-Interest Revenue

Reported non-interest revenue was $17,825 million, an increase of $4,949 million or 38% from the prior year, and adjusted non-interest revenue was $10,181 million, a decrease of $2,666 million from the prior year. Adjusted non-interest revenue excluded the impact of fair value management actions of $7,665 million in the current year and the impact of divestitures in both the current and prior years. Reported non-interest revenue, net of CCPB, was $18,508 million, an increase of $7,031 million from the prior year, and adjusted non-interest revenue, net of CCPB, was $10,864 million, a decrease of $584 million or 5%.

Adjusted non-interest revenue decreased due to divestitures, which reduced mutual fund revenue and investment management and custodial fee revenue, as well as lower securities gains, other than trading and underwriting and advisory revenue, partially offset by higher trading and card fee revenue and the impact of the stronger U.S. dollar. Trading revenue is discussed in the Trading-Related Revenue section that follows.

Gross insurance loss was $157 million, compared with revenue of $1,941 million in the prior year, primarily due to changes in the fair value of investments and lower annuity sales. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income and equity assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. The impact of these fair value changes was largely offset by changes in the fair value of policy benefit liabilities, which are reflected in the Insurance Claims, Commissions and Changes in Policy Benefits section.

We generally focus on analyzing revenue net of CCPB, given the extent to which insurance revenue can vary, and given that this variability is largely offset in CCPB.

## Non-Interest Revenue

| (Canadian $ in millions) For the year ended October 31 | 2022 | 2021 | Change from 2021 (%) |
|---|---|---|---|
| Securities commissions and fees | **1,082** | 1,107 | **(2)** |
| Deposit and payment service charges | **1,318** | 1,243 | **6** |
| Trading revenue | **8,250** | 296 | **+100** |
| Lending fees | **1,440** | 1,391 | **4** |
| Card fees | **548** | 442 | **24** |
| Investment management and custodial fees | **1,770** | 1,982 | **(11)** |
| Mutual fund revenue | **1,312** | 1,595 | **(18)** |
| Underwriting and advisory fees | **1,193** | 1,421 | **(16)** |
| Securities gains, other than trading | **281** | 591 | **(52)** |
| Foreign exchange, other than trading | **181** | 167 | **8** |
| Insurance revenue | **(157)** | 1,941 | **(+100)** |
| Share of profit (loss) in associates and joint ventures | **274** | 248 | **10** |
| Other | **333** | 452 | **(26)** |
| Total reported | **17,825** | 12,876 | **38** |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **(683)** | 1,399 | **(+100)** |
| Reported non-interest revenue, net of CCPB | **18,508** | 11,477 | **61** |
| Management of fair value changes on the purchase of Bank of the West (1) | **(7,665)** | – | **na** |
| Impact of divestitures (2) | **21** | (29) | **na** |
| Adjusted non-interest revenue | **10,181** | 12,847 | **(21)** |
| Adjusted non-interest revenue, net of CCPB | **10,864** | 11,448 | **(5)** |
| Insurance revenue, net of CCPB | **526** | 542 | **(3)** |

(1) Fiscal 2022 non-interest revenue included $7,665 million of mark-to-market gains on certain interest rate swaps related to the announced acquisition of Bank of the West resulting from the management of the impact of interest rate changes between the announcement and closing on its fair value and goodwill, recorded in Corporate Services. For further information on this acquisition, refer to the Significant Events section.
(2) Fiscal 2022 non-interest revenue included the impact of divestitures related to the sale of our EMEA Asset Management business of $21 million of non-interest losses, comprising a gain of $8 million related to the transfer of certain U.S. asset management clients and a $29 million loss related to foreign currency translation reclassified from accumulated other comprehensive income to non-interest revenue. Fiscal 2021 non-interest revenue included a $29 million net gain on the sale of our Private Banking business in Hong Kong and Singapore. These amounts were recorded in Corporate Services.

Reported and adjusted revenue measures, net of CCPB, in this section are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

na – not applicable

## Trading-Related Revenue

Trading-related revenue is dependent on, among other things, the volume of activities undertaken for clients who enter into transactions with BMO to mitigate their risks or to invest, as well as market conditions. We earn a spread or profit on the net sum of our client positions by profitably managing, within prescribed limits, the overall risk of our net positions. On a limited basis, we also earn revenue from our principal trading positions.

Reported interest and non-interest trading-related revenue on a teb basis increased $7,725 million to $10,159 million, primarily driven by the impact of fair value management actions related to the announced acquisition of Bank of the West of $7,665 million. Adjusted interest and non-interest trading-related revenue on a teb basis increased $60 million or 2% to $2,494 million. Foreign exchange trading-related revenue increased $155 million or 37% due to higher client activity. Equities trading-related revenue increased $98 million or 12% due to elevated levels of client activity in the first quarter of 2022. Commodities trading-related revenue increased $42 million or 29%, driven by higher metals and energy trading due to volatile markets. Interest rate trading-related revenue decreased $124 million or 12% due to lower levels of client activity. Other trading-related revenue increased $7,554 million, primarily due to the impact of fair value management actions related to the announced acquisition of Bank of the West, partially offset by mark-downs on loan underwriting commitments, largely in the United States.

Refer to the Enterprise-Wide Risk Management – Market Risk section for more information on trading-related revenue.

**Trading-related revenue** includes net interest income and non-interest revenue earned from on-balance sheet and off-balance sheet positions undertaken for trading purposes. The management of these positions typically includes marking them to market on a daily basis. Trading-related revenue also includes income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts. BMO analyzes revenue on a teb basis at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent before-tax basis in order to facilitate comparisons of income between taxable and tax-exempt sources. This adjustment is offset in Corporate Services.

### Interest and Non-Interest Trading-Related Revenue (1)

| (Canadian $ in millions)<br>(taxable equivalent basis)<br>For the year ended October 31 | **2022** | 2021 | **Change from 2021 (%)** |
|---|---|---|---|
| Interest rates | **893** | 1,017 | **(12)** |
| Foreign exchange | **571** | 416 | **37** |
| Equities | **950** | 852 | **12** |
| Commodities | **189** | 147 | **29** |
| Other | **7,556** | 2 | **+100** |
| Total (teb) (2) | **10,159** | 2,434 | **+100** |
| Teb offset | **237** | 285 | **(17)** |
| Reported total | **9,922** | 2,149 | **+100** |
| Management of fair value changes on the purchase of Bank of the West (3) | **(7,665)** | – | **na** |
| Adjusted total trading revenue (3) | **2,257** | 2,149 | **5** |
| Reported as: | | | |
| Net interest income | **1,909** | 2,138 | **(11)** |
| Non-interest revenue – trading revenue | **8,250** | 296 | **+100** |
| Total (teb) | **10,159** | 2,434 | **+100** |
| Teb offset | **237** | 285 | **(17)** |
| Reported total, net of teb offset | **9,922** | 2,149 | **+100** |
| Adjusted total trading revenue (3) | **2,257** | 2,149 | **5** |

(1) Reported and adjusted revenue measures, net of CCPB, adjusted results, and teb amounts are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Trading-related revenue is presented on a taxable equivalent basis (teb).
(3) Fiscal 2022 included $7,665 million of mark-to-market gains on certain interest rate swaps related to the announced acquisition of Bank of the West resulting from the management of the impact of interest rate changes between the announcement and closing on its fair value and goodwill. These amounts were recorded in other trading revenue, in Corporate Services. For further information on this acquisition, refer to the Significant Events section.

na – not applicable

# Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were negative $683 million in 2022, compared with $1,399 million in the prior year. CCPB decreased, primarily due to changes in the fair value of policy benefit liabilities and the impact of lower annuity sales. The changes were largely offset in revenue.

# Total Provision for Credit Losses

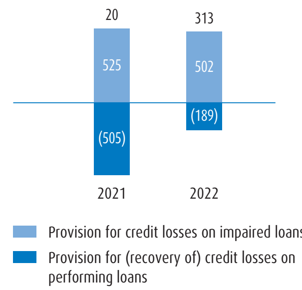
The total provision for credit losses (PCL) was $313 million, compared with $20 million in the prior year, primarily due to lower recoveries of performing loan provisions, due to a deteriorating economic outlook. Total PCL as a percentage of average net loans and acceptances was 6 basis points, compared with nil basis points in the prior year. PCL on impaired loans was $502 million, a decrease of $23 million from the prior year, largely due to lower provisions in Canadian P&C and BMO Capital Markets, partially offset by higher provisions in U.S. P&C. PCL on impaired loans as a percentage of average net loans and acceptances was 10 basis points, compared with 11 basis points in the prior year. There was a $189 million recovery of the provision for credit losses on performing loans in the current year, compared with a $505 million recovery in the prior year. The year-over-year change largely reflected the impact of a deteriorating economic outlook, a lower benefit from improvement in credit quality and stronger balance growth, partially offset by reduced uncertainty as a result of the improving pandemic environment and a smaller impact from changing scenario weight.

PCL on impaired loans decreased $61 million in Canadian P&C, reflecting lower Commercial Banking and Personal and Business Banking provisions, and increased $85 million in U.S. P&C, reflecting higher Commercial Banking provisions, partially offset by lower Personal and Business Banking provisions. In BMO Capital Markets, PCL on impaired loans decreased $43 million from the prior year. All lines of business recorded recoveries of provisions for credit losses on performing loans in the current year, similar to the prior year.

Note 4 of the consolidated financial statements provides additional information on PCL, including on a geographic basis. Table 12 in the Supplemental Information provides further segmented PCL information.

For further information, refer to the Credit and Counterparty Risk – Provision for Credit Losses and Critical Accounting Estimates and Judgments – Allowance for Credit Losses sections.

**Provision for Credit Losses**
($ millions)






**Provision for credit losses (PCL)** is a charge to income that represents an amount deemed adequate by management to fully provide for impairment in a portfolio of loans and acceptances and other credit instruments, given the composition of the portfolio, the probability of default, the economic outlook and the allowance for credit losses already established. PCL can comprise both a provision for credit losses on impaired loans and a provision for credit losses on performing loans. For further information, refer to the Credit and Counterparty Risk – Provision for Credit Losses and Critical Accounting Estimates and Judgments – Allowance for Credit Losses sections and Note 4 of the consolidated financial statements.

**Average net loans and acceptances** is the daily or monthly average balance of loans and customers' liability under acceptances, net of the allowance for credit losses, over a one-year period.

## Provision for Credit Losses by Operating Group

| (Canadian $ in millions) | Canadian P&C | U.S. P&C | Total P&C | BMO Wealth Management | BMO Capital Markets | Corporate Services | Total Bank |
|---|---|---|---|---|---|---|---|
| **2022** | | | | | | | |
| Provision for (recovery of) credit losses on impaired loans | **432** | **107** | **539** | **2** | **(32)** | **(7)** | **502** |
| Provision for (recovery of) credit losses on performing loans | **(91)** | **(90)** | **(181)** | **(4)** | **(11)** | **7** | **(189)** |
| Total provision for (recovery of) credit losses | **341** | **17** | **358** | **(2)** | **(43)** | **–** | **313** |
| **2021** | | | | | | | |
| Provision for (recovery of) credit losses on impaired loans | 493 | 22 | 515 | 4 | 11 | (5) | 525 |
| Provision for (recovery of) credit losses on performing loans | (116) | (166) | (282) | (16) | (205) | (2) | (505) |
| Total provision for (recovery of) credit losses | 377 | (144) | 233 | (12) | (194) | (7) | 20 |

## Provision for Credit Losses Performance Ratios

| | **2022** | 2021 |
|---|---|---|
| Total PCL-to-average net loans and acceptances (annualized) (%) | **0.06** | – |
| PCL on impaired loans-to-average net loans and acceptances (annualized) (%) | **0.10** | 0.11 |

# Non-Interest Expense

Reported non-interest expense was $16,194 million, an increase of $685 million or 4% from the prior year.

Adjusted non-interest expense was $15,194 million, an increase of $644 million or 4% from the prior year. Adjusted non-interest expense in the current year excluded a legal provision of $627 million, including legal fees of $22 million, and in the prior year excluded a $779 million write-down of goodwill and a $24 million partial reversal of a restructuring charge. Adjusted non-interest expense in both years excluded divestiture costs, the amortization of acquisition-related intangible assets and acquisition and integration costs.

Reported and adjusted non-interest expense increased, due to higher employee-related costs, computer and equipment costs, advertising and business development costs and professional fees, partially offset by lower premises costs and divestitures. The stronger U.S. dollar increased expenses by 1%.

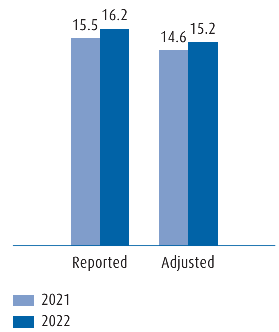
The dollar and percentage changes in expense by category are outlined in the Non-Interest Expense table below.

Performance-based compensation increased $41 million on a reported basis and $40 million on an adjusted basis, or 1% respectively, reflecting improved business performance, partially offset by divestitures. Other employee compensation, which includes salaries, benefits and severance, increased $432 million or 8% on a reported basis, and $379 million or 7% on an adjusted basis, primarily due to sales force expansion and higher salaries, partially offset by divestitures.

Total premises costs decreased $95 million or 9% on a reported basis, and $90 million or 9% on an adjusted basis, reflecting lower real estate costs. Computer and equipment costs increased $334 million or 14% on a reported basis, and $188 million or 8% on an adjusted basis, primarily due to continued investment in technology and digital capabilities to enhance the customer experience and improve efficiency. Amortization of intangible assets on a reported basis decreased $30 million or 5%, and increased $32 million or 6% on an adjusted basis, reflecting higher software amortization. Other expenses were relatively unchanged on a reported basis, and increased $95 million or 4% on an adjusted basis, due to higher advertising and business development costs and professional fees.

For further information on non-GAAP amounts, measures and ratios in this Non-Interest Expense section, refer to the Non-GAAP and Other Financial Measures section.

**Non-Interest Expense**
($ billions)




## Non-Interest Expense (1)

| (Canadian $ in millions, on a pre-tax basis)<br>For the year ended October 31 | 2022 | 2021 | Change from 2021 (%) |
|---|---|---|---|
| Employee compensation | | | |
| Salaries | **4,467** | 4,041 | **11** |
| Performance-based compensation | **3,193** | 3,152 | **1** |
| Employee benefits | **1,135** | 1,129 | **1** |
| Total employee compensation | **8,795** | 8,322 | **6** |
| Total premises and equipment | **3,635** | 3,396 | **7** |
| Amortization of intangible assets | **604** | 634 | **(5)** |
| Other expenses | | | |
| Advertising and business development | **517** | 397 | **30** |
| Communications | **278** | 264 | **5** |
| Professional fees | **788** | 607 | **30** |
| Other | **1,577** | 1,889 | **(17)** |
| Total other expenses | **3,160** | 3,157 | **–** |
| Total non-interest expense | **16,194** | 15,509 | **4** |
| Acquisition and integration costs (2) | **(326)** | (9) | **na** |
| Amortization of acquisition-related intangible assets (3) | **(31)** | (88) | **na** |
| Impact of divestitures (4) | **(16)** | (886) | **na** |
| Restructuring (costs) reversals (5) | **–** | 24 | **na** |
| Legal provision (6) | **(627)** | – | **na** |
| Impact of adjusting items on non-interest expense | **(1,000)** | (959) | **na** |
| Total adjusted non-interest expense | **15,194** | 14,550 | **4** |
| Efficiency ratio (%) | **48.0** | 57.0 | **(9)** |
| Efficiency ratio, net of CCPB (%) (1) | **47.1** | 60.1 | **(13)** |
| Adjusted efficiency ratio (%) | **57.3** | 53.6 | **4** |
| Adjusted efficiency ratio, net of CCPB (%) (1) | **55.8** | 56.5 | **(1)** |

(1) Adjusted results, measures and ratios are on a non-GAAP basis. For a quantitative reconciliation of revenue, net of CCPB, and adjusted results, refer to the Revenue and Non-GAAP and Other Financial Measures sections.

(2) Fiscal 2022 reported non-interest expense included acquisition and integration costs of $316 million related to the announced acquisition of Bank of the West, recorded in Corporate Services. In addition, reported non-interest expense included acquisition and integration costs related to KGS-Alpha and Clearpool of $10 million in fiscal 2022 and $9 million in fiscal 2021, recorded in BMO Capital Markets.

(3) Amortization of acquisition-related intangible assets of $31 million in fiscal 2022 and $88 million in fiscal 2021 were recorded in the related operating group.

(4) Fiscal 2022 reported non-interest expense included the impact of divestitures related to the sale of our EMEA Asset Management business and our Private Banking business in Hong Kong and Singapore. Fiscal 2022 included expenses of $32 million, including taxes of $22 million, and fiscal 2021 included a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, as well as $107 million of divestiture-related costs for both transactions, recorded in Corporate Services.

(5) Fiscal 2021 reported non-interest expense included a partial reversal of $24 million of restructuring charges related to severance recorded in 2019, in Corporate Services.

(6) Fiscal 2022 reported non-interest expense included a legal provision of $627 million, including legal fees of $22 million, related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank, recorded in Corporate Services. For further information, refer to the Provisions and Contingent Liabilities section in Note 24 of the consolidated financial statements.

na – not applicable

# Provision for Income Taxes and Other Taxes

| (Canadian $ in millions, except as noted)<br>For the year ended October 31 | **2022** | 2021 |
|---|---|---|
| Payroll levies | **398** | 355 |
| Property taxes | **34** | 36 |
| Provincial capital taxes | **45** | 36 |
| Business taxes | **11** | 10 |
| Harmonized sales tax, GST, VAT and other sales taxes | **459** | 382 |
| Sundry taxes | **1** | 1 |
| Total government levies other than income taxes (other taxes) (1) | **948** | 820 |
| Provision for income taxes | **4,349** | 2,504 |
| Provision for income taxes and other taxes | **5,297** | 3,324 |
| Provision for income taxes and other taxes as a % of income before provision for income taxes and other taxes | **28.1** | 30.0 |
| Effective income tax rate (%) | **24.3** | 24.4 |
| Adjusted effective income tax rate (%) | **22.8** | 22.7 |

(1) Other taxes are included in various non-interest expense categories.

Provision for income taxes and other taxes and the adjusted effective tax rate in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.



The provision for income taxes and other taxes was $5,297 million in the current year. Of this amount, $3,651 million was incurred in Canada, with $2,921 million included in the provision for income taxes, and the remaining $730 million was recorded in total government levies other than income taxes (other taxes). The increase from $3,324 million in the prior year primarily reflected a higher provision for income taxes.

The provision for income taxes presented in the Consolidated Statement of Income is based on transactions recorded in income, regardless of when such transactions are subject to taxation by tax authorities, with the exception of the repatriation of retained earnings from subsidiaries, as outlined in Note 22 of the consolidated financial statements.

Management assesses BMO's consolidated results and the associated provision for income taxes on a GAAP basis. We assess the performance of our operating groups and associated income taxes on a taxable equivalent basis, and we report accordingly.

The provision for income taxes was $4,349 million, compared with $2,504 million in the prior year. The reported effective tax rate was 24.3%, compared with 24.4% in the prior year. The adjusted provision for income taxes was $2,670 million, compared with $2,537 million in the prior year. The adjusted effective tax rate [1] was 22.8%, compared with 22.7% in the prior year.

BMO partially hedges, for accounting purposes, the foreign exchange risk arising from investments in foreign operations by funding the investments in the corresponding foreign currency. A gain or loss on hedging activities and an unrealized gain or loss on translation of foreign operations are charged or credited to other comprehensive income. For income tax purposes, a gain or loss on hedging activities results in an income tax charge or credit in the current period that is charged or credited to other comprehensive income, while the associated unrealized gain or loss on investments in foreign operations does not incur income taxes until the investments are liquidated. The income tax charge/benefit arising from a hedging gain/loss is a function of the fluctuations in exchange rates from period to period. Hedging of investments in foreign operations has given rise to an income tax recovery in other comprehensive income of $124 million in the current year, compared with an expense of $180 million in the prior year. Refer to Note 22 of the consolidated financial statements for further information.

Legislative changes and changes in tax policy, including their interpretation by tax authorities and the courts, may impact our earnings. Refer to the discussion in the Critical Accounting Estimates and Judgments section for further information. In the table above we disclose provision for income taxes and other taxes as a percentage of income before the provision for income taxes and other taxes, which is a non-GAAP financial ratio and might not be comparable to similar financial measures disclosed by other issuers, to reflect the full impact of all government levies and taxes as a percentage of our income.

For further information on non-GAAP amounts, measures and ratios in this Provision for Income Taxes and Other Taxes section, refer to the Non-GAAP and Other Financial Measures section.

(1) The adjusted effective tax rate is computed using adjusted net income and adjusted provision for income taxes rather than reported net income in the determination of income subject to income tax.

# 2022 Operating Groups Performance Review

## Summary

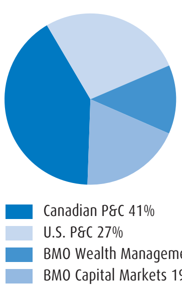
This section includes an analysis of the financial results of BMO's operating groups and descriptions of their operating segments, businesses, strategies, challenges, achievements and outlooks.

| | BMO Financial Group | | | |
|---|---|---|---|---|
| **Operating Groups** | Personal and Commercial (P&C) Banking | | BMO Wealth Management | BMO Capital Markets |
| **Operating Segments** | Canadian P&C | U.S. P&C | BMO Wealth Management | BMO Capital Markets |
| **Lines of Business** | • Personal and Business Banking<br>• Commercial Banking | • Personal and Business Banking<br>• Commercial Banking | • BMO Private Wealth<br>• BMO InvestorLine<br>• BMO Wealth Management U.S.<br>• BMO Global Asset Management<br>• BMO Insurance | • Investment and Corporate Banking<br>• Global Markets |
| | Corporate Services, including Technology and Operations | | | |

BMO's business mix is well diversified by operating segment and by geography.

**Reported Net Income by Operating Group***

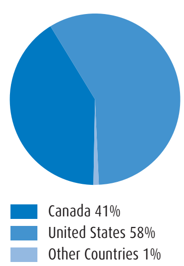
2022




* Percentages determined excluding results in Corporate Services.

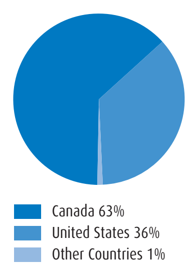
**Reported Net Income by Geography**

2022




**Adjusted Net Income by Geography**

2022




Adjusted net income is on a non-GAAP basis and is discussed in the Non-GAAP and Other Financial Measures section.

## How BMO Reports Operating Group Results

BMO reports financial results for its three operating groups, one of which comprises two operating segments, all of which are supported by Corporate Units and Technology and Operations within Corporate Services. Operating segment results include treasury-related allocations in revenue, non-interest expense allocations from Corporate Units and Technology and Operations (T&O) and allocated capital.

BMO employs funds transfer pricing and liquidity transfer pricing between treasury and the operating segments in order to assign the appropriate cost and credit to funds for the appropriate pricing of loans and deposits, and to help assess the profitability performance of each line of business. These practices also capture the cost of holding supplemental liquid assets to meet contingent liquidity requirements, as well as facilitating the management of interest rate risk and liquidity risk within our risk appetite framework and regulatory requirements. We review our transfer pricing methodologies at least annually, to align with our interest rate, liquidity and funding risk management practices.

The costs of Corporate Units and T&O services are largely allocated to the four operating segments, with any remaining amounts retained in Corporate Services. Expenses directly incurred to support a specific operating segment are generally allocated to that operating segment. Other expenses that are not directly attributable to a specific operating segment are allocated across the operating segments, reasonably reflective of the level of support provided to each operating segment. We review these expense allocation methodologies periodically.

Capital is allocated to the operating segments based on the amount of regulatory capital required to support business activities. Unallocated capital is reported in Corporate Services. We review our capital allocation methodologies annually.

Periodically, certain lines of business and units within our organizational structure are realigned to support our strategic priorities. Effective the first quarter of 2022, loans, deposits and revenue in our business banking line of business have been reclassified from Commercial Banking to Personal and Business Banking within Canadian P&C, to align with our organizational structure. In addition, certain expense allocations have been updated to better align with current experience. Prior periods have been reclassified to conform with the current period's presentation.

We analyze revenue at the consolidated level based on GAAP revenue as reported in the audited annual consolidated financial statements, rather than on a taxable equivalent basis (teb), which is consistent with our Canadian banking peer group. Like many banks, BMO analyzes revenue on a teb basis at the operating segment level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis in order to facilitate comparisons of income between taxable and tax-exempt sources. The offset to the segment teb adjustments is reflected in Corporate Services revenue and provision for income taxes.

MD&A

# Personal and Commercial Banking (1)

| (Canadian $ in millions, except as noted) | Canadian P&C | | U.S. P&C | | Total P&C | |
|---|---|---|---|---|---|---|
| As at or for the year ended October 31 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| Net interest income (teb) (2) | **7,449** | 6,561 | **5,037** | 4,268 | **12,486** | 10,829 |
| Non-interest revenue | **2,419** | 2,225 | **1,265** | 1,243 | **3,684** | 3,468 |
| Total revenue (teb) | **9,868** | 8,786 | **6,302** | 5,511 | **16,170** | 14,297 |
| Provision for credit losses on impaired loans | **432** | 493 | **107** | 22 | **539** | 515 |
| Provision for (recovery of) credit losses on performing loans | **(91)** | (116) | **(90)** | (166) | **(181)** | (282) |
| Total provision for (recovery of) credit losses | **341** | 377 | **17** | (144) | **358** | 233 |
| Non-interest expense | **4,349** | 3,968 | **3,043** | 2,813 | **7,392** | 6,781 |
| Income before income taxes | **5,178** | 4,441 | **3,242** | 2,842 | **8,420** | 7,283 |
| Provision for income taxes (teb) | **1,352** | 1,153 | **745** | 666 | **2,097** | 1,819 |
| Reported net income | **3,826** | 3,288 | **2,497** | 2,176 | **6,323** | 5,464 |
| Amortization of acquisition-related intangible assets (3) | **1** | 1 | **5** | 24 | **6** | 25 |
| Adjusted net income | **3,827** | 3,289 | **2,502** | 2,200 | **6,329** | 5,489 |

(1) Adjusted results and teb amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Taxable equivalent basis amounts of $25 million in fiscal 2022 and $24 million in fiscal 2021 were recorded in net interest income.
(3) Amortization of acquisition-related intangible assets pre-tax amounts of $7 million in fiscal 2022 and $35 million in fiscal 2021 were recorded in non-interest expense.

The Personal and Commercial Banking (P&C) operating group comprises our two retail and commercial banking operating segments, Canadian Personal and Commercial Banking (Canadian P&C) and U.S. Personal and Commercial Banking (U.S. P&C). The combined P&C banking business net income was $6,323 million, an increase of $859 million or 16% from the prior year. Adjusted net income, which excludes the amortization of acquisition-related intangible assets, was $6,329 million, an increase of $840 million or 15% from the prior year. Increases in reported and adjusted net income were primarily driven by revenue growth, partially offset by higher expenses and higher provisions for credit losses. These operating segments are reviewed separately in the sections that follow.

For further information on non-GAAP amounts, measures and ratios in this 2022 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

# Canadian Personal and Commercial Banking

Canadian Personal and Commercial Banking provides financial products and services to nearly eight million customers. Personal and Business Banking helps customers make real financial progress through a network of almost 900 branches, contact centres and digital banking platforms, with more than 3,200 automated teller machines. Commercial Banking serves clients across Canada as a trusted advisor, offering industry expertise, a local presence and a comprehensive range of commercial products and services.



## Lines of Business

**Personal and Business Banking** provides customers with a wide range of products and services, including chequing and savings accounts, credit cards, mortgages, personal loans, small business lending, cash management, and everyday financial and investment advice, with an overall focus on providing customers with an exceptional experience in every interaction and helping them make real financial progress.

**Commercial Banking** provides clients with a comprehensive range of commercial products and services, including a variety of financing options and treasury and payment solutions, as well as risk management products. Our commercial bankers partner with clients to anticipate their financial needs, and share expertise and knowledge to help them manage and grow their businesses.

## Strategy and Key Priorities

### 2022 Priorities and Achievements

### **Key Priority:** Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced client experiences

**Achievements**

- Maintained strong customer loyalty in Personal and Business Banking and top-tier customer loyalty in Commercial Banking, as measured by Net Promoter Score [(1)]
- Named Best Commercial Bank in Canada for the eighth consecutive year, as well as Best Retail Bank, by *World Finance* magazine at its 2022 Banking Awards in recognition of our commitment to fostering client-centric relationships, driving digital innovation and transformation, and our comprehensive understanding of evolving client needs and industry developments
- Awarded #1 in Customer Satisfaction with Retail Banking Advice in the J.D. Power [(2)] 2022 Canada Retail Banking Advice Satisfaction Study, demonstrating our continued commitment to helping customers make real financial progress, with clarity of advice and concern for customer needs
- Continued to grow our customer-facing, advice-based roles, strengthening our ability to engage with customers on the financial issues that are important to them

### **Key Priority:** In Personal and Business Banking, drive top-tier customer acquisition, build leading share of wallet, and enhance the digital experience to help customers make real financial progress

**Achievements**

- Continued to strengthen our digital sales and service capabilities, with more than a third of core banking product sales purchased and delivered digitally, and more than 90% of service transactions completed through self-serve channels, allowing our front-line employees to focus on delivering leading advisory services
- Improved market share in key categories, including retail operating deposits and credit cards, supported by strong customer acquisition
- Enhanced personal credit card offerings, including a first-to-market Pre-Authorized Payments Manager, and launched a small business World Elite Mastercard® for our customers to maximize the benefits from their everyday spending and travel expenses
- Helped customers to start saving, stay on track and achieve their goals with our Savings Amplifier, which can automate savings with no monthly fees and a competitive interest rate, and launched a Savings Goals feature in our mobile banking app
- Enhanced our BMO NewStart® program, extending access to no-fee banking for newcomers to Canada, including support for displaced Ukrainians
- Continued to enhance our industry-leading Business Banking Xpress™ (BBX) platform, which has facilitated more than $2.5 billion in lending authorizations to date, while providing solutions to business owners quickly, in a single intuitive experience
- Announced Business Within Reach: BMO for Black Entrepreneurs, a new program providing access to capital, educational resources and professional partnerships for Black-owned businesses; and committed $100 million in loans to help Black-led businesses start up, scale up and grow
- Launched BMO Global Money Transfer™, providing a fast and convenient digital solution to send money internationally 24/7, including a Send Again feature for recurring transactions, a digital first for a Canadian bank
- Introduced new digital tools to meet our customers' cash management needs, including a Low Balance Alert feature, which signals that their account balance has dipped below certain thresholds, and Same Day Grace, which allows customers to return their account to a positive balance and avoid fees

(1) Net Promoter Score (NPS): The percentage of surveyed customers who would recommend BMO to a friend or colleague.
(2) For more information, refer to www.jdpower.com/business.

## **Key Priority:** In Commercial Banking, strengthen core market presence, accelerate growth in key sectors and continue to build share of wallet with strengthened digital capabilities

**Achievements**

- Reinforced our second-place ranking in national market share for lending, maintaining a leadership position in the Atlantic and British Columbia regions
- Demonstrated our support for gender equity and the advancement of women with a commitment to allocate $5 billion in capital over five years to financing for women entrepreneurs as they grow their businesses
- Enhanced our fully integrated North American platform for Treasury and Payment Services in Canada to simplify the collection of information for anti-money laundering purposes, enhancing the onboarding experience and digitizing billing, resulting in significant time savings for both customers and employees
- Partnered with Export Development Canada (EDC) to bring sustainable finance solutions to large and mid-sized Canadian exporting businesses, offering a new EDC Sustainable Financing Guarantee to support clients in their transition to more sustainable business operations that eliminate or significantly reduce emissions
- First Canadian bank to introduce a portal for commercial application programming interface (API) developers, enhancing our digital capabilities and advancing business-to-business integration

MD&A

## **Key Priority:** Drive efficiencies by simplifying and streamlining operations, investing in digital capabilities and through cross-bank collaboration

**Achievements**

- Recognized as overall leader in the Q4 2022 Forrester Digital Experience Review™ for Canadian Mobile Banking Apps, with the highest score in six areas, including money movement and self-service features
- Ranked first in the Insider Intelligence Canada Mobile Banking Emerging Features Benchmark 2022, reflecting the strength of select emerging features offered on the BMO mobile banking app, with top marks in the digital money management, account management and alerts categories
- Ranked first in the Best Fintech Accelerator and Incubator category at the 2022 Finovate Awards for the BMO Innov8™ program, recognizing our commitment to deliver leading digital experiences to customers that help them make real financial progress
- Refreshed the personal online banking desktop platform, driving growth with an enhanced customer experience, accelerated digital sales and increased use of key functionality
- Removed complexity by digitizing and simplifying key branch processes to complete transactions efficiently and seamlessly, leading to expanded capacity for our front-line employees
- Optimized our commercial sales and service model to allow for more focused specialization, which can deliver services consistently across all regions

## **Key Priority:** Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

**Achievements**

- Achieved strong employee engagement index above the leading companies' benchmark [(1)], with improved results across all areas, and reached a top-quartile culture ranking, placing us among the best financial institutions surveyed globally
- Highlighted the core performance priorities for Personal and Business Banking that will enable our employees to maintain our momentum as a high-performing culture, and created a recognition program for "All Stars" who exemplify those priorities
- Launched an expanded mentoring and networking platform that makes it easy for all Commercial Banking employees to connect with their peers, as well as our leaders, across geographies and sectors

### 2023 Focus

- Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced One Client experiences
  - In Personal and Business Banking, continue to drive customer acquisition, increase share of wallet, enhance digital engagement and in-person guidance conversations, and help customers make real financial progress
  - In Commercial Banking, maintain focus on key sectors and geographies, and enhance the client experience through innovative capabilities and products, including climate transition and digital first solutions
- Drive efficiencies by simplifying and streamlining operations, and investing in digital capabilities
- Foster a winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

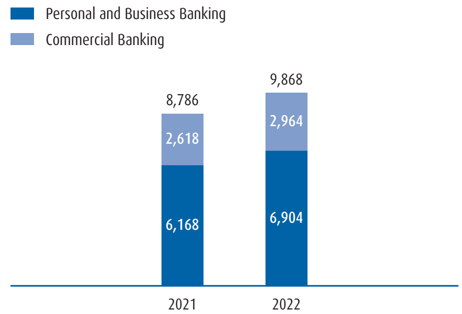
(1) Source: BMO Ambition 2025 Winning Culture Checkup | Qualtrics, 2022.

## Canadian P&C (1)

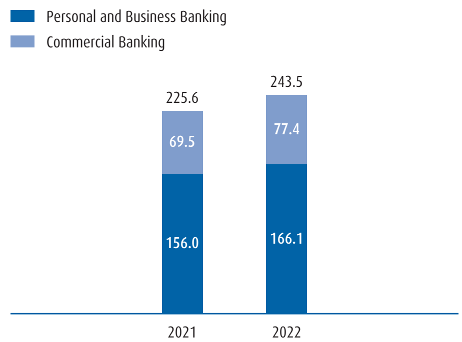
| (Canadian $ in millions, except as noted)<br>As at or for the year ended October 31 | **2022** | 2021 |
|---|---|---|
| Net interest income | **7,449** | 6,561 |
| Non-interest revenue | **2,419** | 2,225 |
| Total revenue | **9,868** | 8,786 |
| Provision for credit losses on impaired loans | **432** | 493 |
| Provision for (recovery of) credit losses on performing loans | **(91)** | (116) |
| Total provision for credit losses | **341** | 377 |
| Non-interest expense | **4,349** | 3,968 |
| Income before income taxes | **5,178** | 4,441 |
| Provision for income taxes | **1,352** | 1,153 |
| Reported net income | **3,826** | 3,288 |
| Amortization of acquisition-related intangible assets (2) | **1** | 1 |
| Adjusted net income | **3,827** | 3,289 |
| Adjusted non-interest expense | **4,348** | 3,966 |
| **Key Performance Metrics and Drivers** | | |
| Personal and Business Banking revenue | **6,904** | 6,168 |
| Commercial Banking revenue | **2,964** | 2,618 |
| Net income growth (%) | **16.4** | 62.8 |
| Revenue growth (%) | **12.3** | 9.4 |
| Non-interest expense growth (%) | **9.6** | 1.7 |
| Adjusted non-interest expense growth (%) | **9.6** | 1.7 |
| Return on equity (%) (3) | **32.1** | 29.1 |
| Adjusted return on equity (%) (3) | **32.1** | 29.1 |
| Operating leverage (%) | **2.7** | 7.7 |
| Adjusted operating leverage (%) | **2.7** | 7.7 |
| Efficiency ratio (%) | **44.1** | 45.2 |
| Net interest margin on average earning assets (%) | **2.68** | 2.64 |
| Average earning assets | **278,022** | 248,215 |
| Average gross loans and acceptances | **290,324** | 261,869 |
| Average net loans and acceptances | **288,979** | 260,359 |
| Average deposits | **243,541** | 225,555 |
| Full-time equivalent employees | **15,475** | 14,687 |

(1) Adjusted results and ratios in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Amortization of acquisition-related intangible assets pre-tax amounts of $1 million in fiscal 2022 and $2 million in fiscal 2021 are recorded in non-interest expense.
(3) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.

### Revenue by Line of Business
($ millions)

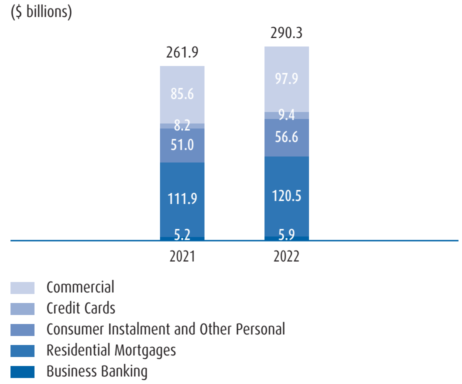



### Average Deposits*
($ billions)




*Numbers may not add due to rounding.

### Average Gross Loans and Acceptances*
($ billions)




*Numbers may not add due to rounding.

## Financial Review

Canadian P&C reported net income was $3,826 million, an increase of $538 million or 16% from the prior year. Results were driven by a 12% increase in revenue, with higher net interest income and non-interest revenue, and lower provisions for credit losses compared with the prior year, partially offset by higher expenses.

Total revenue was $9,868 million, an increase of $1,082 million or 12% from the prior year. Net interest income increased $888 million or 14%, due to higher loan and deposit balances, and higher net interest margins. Non-interest revenue increased $194 million or 9%, with increases across most categories, including card-related revenue and deposit fee revenue, partially offset by lower gains on investments in our commercial business. Personal and Business Banking revenue increased $736 million or 12%, due to higher net interest income and non-interest revenue. Commercial Banking revenue increased $346 million or 13%, due to higher net interest income.

Net interest margin of 2.68% increased 4 basis points from the prior year, primarily due to higher deposit margins that reflected the impact of the higher rate environment, partially offset by lower loan margins and loans growing faster than deposits.

Total provision for credit losses was $341 million, a decrease of $36 million from the prior year. The provision for credit losses on impaired loans was $432 million, a decrease of $61 million, due to lower Commercial Banking and Personal and Business Banking provisions. There was a $91 million recovery of the provision for credit losses on performing loans in the current year, compared with a $116 million recovery in the prior year.

Reported non-interest expense was $4,349 million, an increase of $381 million or 10% from the prior year, reflecting investments in the business, including sales force expansion and technology costs, as well as higher salaries.

Average gross loans and acceptances increased $28.5 billion or 11% from the prior year to $290.3 billion. Personal and Business Banking loan balances increased 9% and Commercial Banking loan balances increased 14%, while credit card balances increased 15%. Average deposits increased $18.0 billion or 8% to $243.5 billion. Personal and Business Banking deposits increased 6%, with strong growth in chequing and savings account deposits, as well as higher term deposits. Commercial Banking deposits increased 11%.

For further information on non-GAAP amounts, measures and ratios in this 2022 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.



## Business Environment and Outlook

Canadian P&C's strong performance in fiscal 2022 demonstrated resilience and an ability to adapt quickly to economic uncertainty, high inflation and a rapidly rising interest rate environment. Our performance was supported by higher consumer spending and business investment as remaining pandemic restrictions were lifted, higher margins reflecting the rising interest rate environment and good customer acquisition. In addition, strategic investments in our sales force and technology supported growth across our lines of business and improved efficiency. Mortgage growth remained robust through fiscal 2022, due to elevated housing market activity and prices, but is moderating as a result of higher interest rates and slowing demand, and a period of lower mortgage origination volumes is expected. Business lending growth has accelerated, reflecting strong consumer demand, capital investments and a rebound in utilization, but volumes are expected to moderate in response to higher interest rates and slower economic growth. Credit performance was strong, with delinquency, insolvency and impairment rates well below pre-pandemic levels. Growth in consumer and business deposits reflected government support and reduced spending during the pandemic, and deposits have continued to grow at a more modest pace, supported by strong employment and wage growth.

Economic uncertainty is expected to continue in fiscal 2023. Interest rates are expected to rise further in the near term, supporting continued margin expansion but reducing loan demand. Credit performance is expected to return to more normalized levels but remains well-managed, as inflation and interest costs put more pressure on purchasing power and household budgets, and the economy continues to slow.

The Canadian financial services landscape remains highly competitive, with traditional and non-traditional competitors offering a wide range of banking products and services across physical and digital channels. Canadian P&C is well-positioned to compete in this rapidly evolving landscape.

Our focus on helping customers make real financial progress by delivering exceptional customer service and advice, together with leading digital experiences, is key to successfully delivering on our strategy.

The Canadian economic environment in calendar 2022 and the outlook for calendar 2023 are discussed in more detail in the Economic Developments and Outlook section.

**Caution**

This Canadian Personal and Commercial Banking section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# U.S. Personal and Commercial Banking

U.S. Personal and Commercial Banking provides financial products and services to more than two million customers. Personal and Business Banking helps customers make real financial progress through an extensive network of more than 500 branches, contact centres and digital banking platforms, with nationwide access to more than 40,000 automated teller machines. Commercial Banking serves clients across the United States as a trusted advisor, offering industry expertise, a local presence and a comprehensive range of commercial products and services.

## Lines of Business

**Personal and Business Banking** (P&BB) offers a variety of products and services, including deposits, home lending, consumer credit, small business lending, credit cards and other banking services, with an overall focus on providing customers with an exceptional experience in every interaction and helping them make real financial progress.

**Commercial Banking** provides clients with a comprehensive range of commercial products and services, including a variety of financing options and treasury and payment solutions, as well as risk management products. Our commercial bankers partner with clients to anticipate their financial needs, and share expertise and knowledge to help them manage and grow their businesses.

## Strategy and Key Priorities

### 2022 Priorities and Achievements

**Key Priority:** Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced client experiences

**Achievements**

- Continued to strengthen customer loyalty in Personal and Business Banking and maintained top-tier customer loyalty in Commercial Banking, as measured by Net Promoter Score [(1)]
- Reinforced our second-place ranking in market share for deposits in the core Chicago and Milwaukee markets, with a top-three position across our Midwest footprint
- Maintained our partnership with 1871, a Chicago-based business incubator, with the third year of our WMN•FINtech™ program, now the largest non-profit women's fintech accelerator program in North America
- Deployed more than US$5.5 billion in loans and investments in the past two years as part of BMO EMpower™, exceeding our commitment of US$5 billion over five years to address key barriers faced by U.S. minority businesses, communities and families
- Rated Outstanding by the Office of the Comptroller of the Currency on *Community Reinvestment Act* performance, recognizing our commitment to help support communities with moderate or low income levels

**Key Priority:** In Personal and Business Banking, continue to drive new customer acquisition, increase digital engagement, and help customers make real financial progress

**Achievements**

- Continued to strengthen our digital sales and service capabilities, with digital adoption rate rising more than 350 basis points year-over-year, nearly one third of core banking product sales purchased and delivered digitally, and close to 80% of service transactions completed through self-serve channels, allowing our front-line employees to focus on delivering leading advisory services
- Enhanced our credit card offering by refreshing CashBack™ Mastercard® to enable our customers to make the most of their everyday spending
- Introduced Real Financial Progress™ checks, including conversations about personal finance that help us better understand our customers' goals and provide them with financial products and services that can help them achieve these goals, with more than 350,000 personalized conversations held in the current year
- Supported home ownership in minority communities by offering down payment relief through the Welcome Home Grant™ program in our Chicago and Phoenix markets
- Advanced our offerings for underserved customer groups, reducing fees and improving their access to products and services, including an enhanced Credit Builder™ offering, opening more than 68,000 Bank On™ certified Smart Money™ accounts
- Eliminated non-sufficient funds and overdraft transfer fees, and significantly reduced overdraft fees
- Removed systemic barriers for small businesses and empowered their local communities by funding more than US$66 million in special-purpose credit programs that support Black, Latinx and women-owned businesses, while also expanding our program of financial education and coaching for Native American business owners
- Supported small business owners by processing more than 98% of Paycheck Protection Program [(2)] forgiveness applications and doubling our loan commitment to drive progress for business owners and local economies

(1) Net Promoter Score (NPS): The percentage of surveyed customers who would recommend BMO to a friend or colleague.
(2) The U.S. Small Business Administration Paycheck Protection Program (PPP) is a government relief program implemented in fiscal 2020 to support businesses that faced financial hardship caused by the COVID-19 pandemic.

## **Key Priority:** In Commercial Banking, strengthen core market presence, drive growth in expansion markets and continue to build share of wallet with strengthened digital capabilities

**Achievements**

- Continued to extend our footprint and strengthen our position in the markets of Florida, Georgia, Colorado, Michigan, Texas and Southern California, expanding our cross-border banking presence and better serving our clients
- Added new functionality to our fully integrated North American platform for Treasury and Payment Solutions in the United States to simplify the collection of information for anti-money laundering purposes, enhancing the onboarding experience and digitizing billing, resulting in significant time savings for both customers and employees
- Introduced a new segment, mid-ticket equipment financing, in our Transportation Finance business, leveraging our existing credit and industry experience, and extending financing loans up to US$1.5 million for eligible customers in this segment
- Enhanced wire experience (eFX) within Online Banking for Business with same-day euro and pound sterling wires and a new user-friendly interface that enables our customers to transfer funds by wire in the currency of their choice

MD&A

## **Key Priority:** Drive efficiencies by simplifying and streamlining operations, investing in digital capabilities and through cross-bank collaboration

**Achievements**

- Ranked among the top 10 banks for Ease of Use and Financial Fitness functionality by Javelin Strategy & Research in its 2022 Mobile and Online Banking Scorecards
- Introduced personalized self-serve payoff quote feature in online and mobile banking for our Transportation Finance customers
- Invested in key digital capabilities to simplify our customers' onboarding experience and improve convenience, including integrated digital banking enrolment, real-time account funding capability and a credit card lock and unlock feature, as well as credit card activation

## **Key Priority:** Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

**Achievements**

- Achieved strong employee engagement index above the leading companies' benchmark [(1)], with improved results across all areas, and reached a top-quartile culture ranking, placing us among the best financial institutions surveyed globally
- Named one of the Best Places to Work for Disability Inclusion, and received a maximum score of 100 on the Disability Equality Index for the seventh consecutive year
- Earned a top score of 100 on the Human Rights Campaign's Corporate Equality Index for the fifth consecutive year, and recognized as one of the Best Places to Work for LGBTQ Equality
- Continued to strengthen BMORE™, our inclusive hiring and employment program focused on improving access to careers, skills and advancement in the financial industry for under-represented groups
- Recognized by *Forbes* magazine as one of the Best Employers for Diversity for the fourth consecutive year, in an independent survey of 60,000 U.S. employees
- Launched several employee mentorship and development programs for Commercial Banking employees, some of which have been specifically designed for our Asian, Black and Latinx employees

## 2023 Focus

- Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced One Client experiences
  - In Personal and Business Banking, continue to drive customer acquisition, increase share of wallet, enhance digital engagement and in-person guidance conversations, and help customers make real financial progress
  - In Commercial Banking, maintain focus on key sectors and geographies, and enhance the client experience through innovative capabilities and products, including climate transition and digital first solutions
- Drive efficiencies by simplifying and streamlining operations, and investing in digital capabilities
- Foster a winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace
- Effectively integrate Bank of the West upon regulatory approval and closing of the announced acquisition, with an emphasis on customer and employee experience

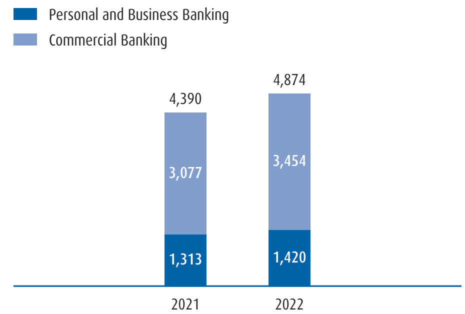
(1) Source: BMO Ambition 2025 Winning Culture Checkup | Qualtrics, 2022.

## U.S. P&C (1)

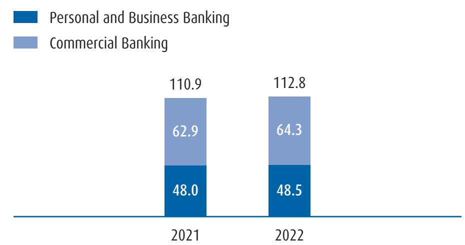
| (Canadian $ in millions, except as noted)<br>As at or for the year ended October 31 | **2022** | 2021 |
|---|---|---|
| Net interest income (teb) (2) | **5,037** | 4,268 |
| Non-interest revenue | **1,265** | 1,243 |
| Total revenue (teb) | **6,302** | 5,511 |
| Provision for credit losses on impaired loans | **107** | 22 |
| Provision for (recovery of) credit losses on performing loans | **(90)** | (166) |
| Total provision for (recovery of) credit losses | **17** | (144) |
| Non-interest expense | **3,043** | 2,813 |
| Income before income taxes | **3,242** | 2,842 |
| Provision for income taxes (teb) | **745** | 666 |
| Reported net income | **2,497** | 2,176 |
| Amortization of acquisition-related intangible assets (3) | **5** | 24 |
| Adjusted net income | **2,502** | 2,200 |
| Adjusted non-interest expense | **3,037** | 2,780 |
| Average earning assets | **138,094** | 122,166 |
| Average gross loans and acceptances | **132,240** | 116,039 |
| Average net loans and acceptances | **131,394** | 115,025 |
| Average deposits | **145,633** | 139,197 |
| (US$ equivalent in millions) | | |
| Net interest income (teb) (4) | **3,893** | 3,400 |
| Non-interest revenue | **981** | 990 |
| Total revenue (teb) | **4,874** | 4,390 |
| Provision for credit losses on impaired loans | **82** | 15 |
| Provision for (recovery of) credit losses on performing loans | **(71)** | (132) |
| Total provision for (recovery of) credit losses | **11** | (117) |
| Non-interest expense | **2,353** | 2,242 |
| Income before income taxes | **2,510** | 2,265 |
| Provision for income taxes (teb) | **577** | 531 |
| Reported net income | **1,933** | 1,734 |
| Amortization of acquisition-related intangible assets (5) | **4** | 19 |
| Adjusted net income | **1,937** | 1,753 |
| Adjusted non-interest expense | **2,348** | 2,216 |
| **Key Performance Metrics and Drivers** (US$ basis) | | |
| Personal and Business Banking revenue | **1,420** | 1,313 |
| Commercial Banking revenue | **3,454** | 3,077 |
| Net income growth (%) | **11.5** | 77.5 |
| Adjusted net income growth (%) | **10.5** | 74.2 |
| Revenue growth (%) | **11.0** | 6.7 |
| Non-interest expense growth (%) | **5.0** | (0.4) |
| Adjusted non-interest expense growth (%) | **6.0** | 0.1 |
| Return on equity (%) (6) | **17.8** | 15.8 |
| Adjusted return on equity (%) (6) | **17.8** | 16.0 |
| Operating leverage (teb) (%) | **6.0** | 7.1 |
| Adjusted operating leverage (teb) (%) | **5.0** | 6.6 |
| Efficiency ratio (teb) (%) | **48.3** | 51.1 |
| Adjusted efficiency ratio (teb) (%) | **48.2** | 50.5 |
| Net interest margin on average earning assets (teb) (%) | **3.64** | 3.49 |
| Average earning assets | **106,829** | 97,321 |
| Average gross loans and acceptances | **102,290** | 92,439 |
| Average net loans and acceptances | **101,636** | 91,631 |
| Average deposits | **112,780** | 110,910 |
| Full-time equivalent employees | **6,822** | 6,442 |

(1) Adjusted results and ratios and teb amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Taxable equivalent basis amounts of $25 million in fiscal 2022 and $24 million in fiscal 2021 are recorded in net interest income.
(3) Amortization of acquisition-related intangible assets pre-tax amounts of $6 million in fiscal 2022 and $33 million in fiscal 2021 are recorded in non-interest expense.
(4) Taxable equivalent basis amounts of US$20 million in both fiscal 2022 and fiscal 2021 are recorded in net interest income.
(5) Amortization of acquisition-related intangible assets pre-tax amounts of US$5 million in fiscal 2022 and US$26 million in fiscal 2021 are recorded in non-interest expense.
(6) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.

### Revenue by Line of Business (teb)
(US$ millions)




### Average Deposits
(US$ billions)




### Average Gross Loans and Acceptances*
(US$ billions)


*Personal Other Loans includes Business Banking, Indirect Auto, Credit Cards, Home Equity, Non-Strategic and other personal loans.

## Financial Review

U.S. P&C reported net income was $2,497 million, an increase of $321 million or 15% from the prior year. The impact of the stronger U.S. dollar increased growth in net income, revenue and expenses by 3%. All amounts in the remainder of this section are presented on a U.S. dollar basis.

Reported net income was $1,933 million, an increase of $199 million or 12% from the prior year, primarily driven by strong revenue growth due to higher net interest income, partially offset by a higher provision for credit losses compared with the prior year and higher expenses.

Total revenue was $4,874 million, an increase of $484 million or 11% from the prior year. Net interest income increased $493 million or 14%, due to higher loan and deposit balances, and higher net interest margins, partially offset by lower Paycheck Protection Program-related (PPP) (1) revenue. Non-interest revenue decreased $9 million or 1%, due to lower operating lease revenue and deposit fee revenue, partially offset by higher lending fee revenue. Commercial Banking revenue increased $377 million or 12%, due to higher net interest income and non-interest revenue. Personal and Business Banking revenue increased $107 million or 8%, due to higher net interest income, partially offset by lower non-interest revenue.

Net interest margin of 3.64% increased 15 basis points from the prior year, primarily due to higher deposit margins that reflected the impact of the higher rate environment, partially offset by loans growing faster than deposits and lower loan margins.

Total provision for credit losses was $11 million, compared with a recovery of $117 million in the prior year. The provision for credit losses on impaired loans increased $67 million, reflecting higher Commercial Banking provisions, partially offset by lower Personal and Business Banking provisions. There was a $71 million recovery of the provision for credit losses on performing loans in the current year, compared with a $132 million recovery in the prior year.

Reported non-interest expense was $2,353 million, an increase of $111 million or 5% from the prior year, primarily due to higher employee-related costs, including higher salaries, and higher technology costs.

Average gross loans and acceptances increased $9.9 billion or 11% from the prior year to $102.3 billion. The reduction in PPP (1) loans reduced loan growth by 3%. Commercial Banking loan balances increased 13% and Personal and Business Banking loan balances increased 1%. Average deposits increased $1.9 billion or 2% to $112.8 billion, with growth of 2% in Commercial Banking deposits and growth of 1% in Personal and Business Banking deposits.

For further information on non-GAAP amounts, measures and ratios in this 2022 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

## Business Environment and Outlook

U.S. P&C recorded strong results in fiscal 2022, supported by continued customer and volume growth, as well as higher margins that reflected rapidly rising interest rates. Commercial Banking continued to drive growth in expansion markets through nationwide coverage of key specialty sectors, while taking a One Client approach with coordinated solutions across businesses to deliver better outcomes for our clients. Business lending growth has accelerated, reflecting consumer demand, capital investments and a rebound in utilization, but volumes are expected to moderate in response to rising interest rates and slower economic growth. Personal and Business Banking is accelerating the shift to digital applications, with investments in technology focused on helping customers make real financial progress. Credit quality was strong, with impairment rates remaining below pre-pandemic levels.

While growth in real GDP strengthened at the beginning of fiscal 2022, it slowed during the second half of the year due to rising interest rates and inflation, as well as declining consumer and business confidence. The U.S. economy is expected to remain weak in fiscal 2023 as a result of the Federal Reserve's measures to control inflation, with housing market activity and credit growth in non-financial sectors expected to continue to slow in the coming year. Credit performance is expected to return to more normalized levels but remains well-managed.

The financial services landscape in the United States remains highly competitive, with traditional and non-traditional competitors offering a wide range of banking products and services across physical and digital channels. U.S. P&C has demonstrated its ability to perform well through economic cycles, supported by its diversified growth strategy.

We remain committed to our customers, employees and local communities – investing in opportunities to enhance customer experience, augment revenue growth and drive positive operating leverage. Once approved and closed, the announced acquisition of Bank of the West will build scale and provide access to attractive markets across the United States.

The U.S. economic environment in calendar 2022 and the outlook for calendar 2023 are discussed in more detail in the Economic Developments and Outlook section.

**Caution**

This U.S. Personal and Commercial Banking section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

(1) The U.S. Small Business Administration Paycheck Protection Program (PPP) is a government relief program implemented in fiscal 2020 to support businesses that faced financial hardship caused by the COVID-19 pandemic.

# BMO Wealth Management

BMO Wealth Management serves a full range of clients, from individuals and families to business owners and institutions, offering a wide spectrum of wealth, asset management and insurance products and services aimed at helping clients plan, grow, protect and transition their wealth. Our asset management business is focused on delivering innovative client solutions and strategies.

## Lines of Business

**BMO Private Wealth** provides full-service investing, banking and wealth advisory services to high net worth and ultra-high net worth clients, leveraging individualized financial planning and advice-based solutions such as investment management, business succession planning, trust and estate services, and philanthropy.

**BMO InvestorLine** leads Wealth Management's digital investing services, which offer three ways for Canadian clients to invest: a self-directed online trading platform for investors who want to be in control of their investments; adviceDirect® for investors who want to make their own investment decisions with personalized advice and support; and SmartFolio® for investors who want low-fee, professionally managed portfolios aligned with their investment objectives.

**BMO Wealth Management U.S.** offers financial solutions to mass affluent, high net worth and ultra-high net worth individuals, families and businesses.

**BMO Global Asset Management** provides investment management services to institutional, retail and high net worth investors, offering a wide range of innovative, client-focused solutions and strategies to help clients meet their investment objectives.

**BMO Insurance** is a diversified insurance and wealth solutions provider and a leader in pension de-risking solutions. It manufactures individual life, critical illness and annuity products, as well as segregated funds. Group creditor and travel insurance is also available to bank customers in Canada through Bank of Montreal.

## Strategy and Key Priorities

### 2022 Priorities and Achievements

### **Key Priority:** Deliver a top-tier digital wealth management offering, building on our differentiated digital advisory capabilities to provide an enhanced client experience

**Achievements**

- Enhanced BMO InvestorLine's digital capability with new features, including a total portfolio snapshot, a dividend calculator, real-time cash transfers and a real-time margin balance refresh
- BMO Wealth Management U.S. added robust new digital capabilities, including BMO Smart Portfolio®, a new digital hybrid investment solution
- Updated the digital experience for clients at BMO Nesbitt Burns, sharing a common technology platform with BMO InvestorLine
- Launched electronic funds transfers (EFTs) and real-time cash transfers (RTCTs), enabling real-time transfers from a BMO bank account into a Nesbitt Burns account and digitizing EFT enrolment for personal and non-personal accounts in myWealth

### **Key Priority:** Scale our leadership position in private wealth advisory services across North America to plan, grow, protect and transition our clients' wealth with confidence

**Achievements**

- BMO Private Banking was named Best Private Bank in Canada by *World Finance* magazine for the 12th consecutive year, in recognition of our client-centric approach in navigating the complexity of managing our clients' wealth during times of uncertainty
- Achieved top-tier customer loyalty scores across BMO Wealth Management businesses, as measured by Net Promoter Score (1)
- Reinvested in Private Wealth, expanding our banker and investment professional workforce, as well as our geographic footprint, including offices in Denver and Salt Lake City

(1) Net Promoter Score (NPS): The percentage of surveyed customers who would recommend BMO to a friend or colleague.

## **Key Priority:** Extend our advantage as a solutions provider, expanding asset management and insurance offerings in key growth areas

**Achievements**

- Received the 2022 RiA Leadership Award for Stewardship for the second consecutive year, recognizing BMO Global Asset Management for its performance in the environmental, social and governance (ESG) space
- Maintained our leadership position in Canadian exchange traded funds (ETFs) through continued product innovation, including a climate-focused solution, a broadened asset allocation ETF suite and exposure to real assets
- Five BMO ETFs and two BMO mutual funds recognized at the Canada Refinitiv Lipper Fund Awards with top honours across eight categories
- Launched digital enrolment in creditor insurance for line of credit accounts in Canadian digital banking, enabling convenient processing for Canadian loan customers
- Expanded the investment team and capabilities at BMO Global Asset Management, adding investment professionals with experience in key global sectors



## **Key Priority:** Enhance efficiencies by continuing to evolve, simplify and streamline our businesses to drive value

**Achievements**

- Introduced multi-factor authentication (MFA) for the advisor channel at BMO Insurance, creating an enhanced and seamless user experience
- Launched BMO Invest™ mobile app, which offers a user-friendly experience with real-time cash movement capabilities and a consolidated view of portfolio details under one-client identification, providing a seamless mobile interface for retail banking and wealth clients

## **Key Priority:** Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

**Achievements**

- Achieved strong employee engagement index, with improved results across all areas, and reached a culture ranking that places us above average among the best financial institutions surveyed globally
- Sponsored a new Women in Asset Management™ program, in partnership with the Ivey Business School, to inspire women to learn about and experience careers in asset management
- Announced support from BMO ETFs for the BlackNorth Initiative's Education Within Reach Program, with a $100,000 investment to help provide career discovery opportunities and support tuition for students in the Black community
- Launched a sponsorship program in collaboration with Black and Latinx employees, as part of the Wealth Racial Equity Action Plan, with insights from the Black Professionals Network and Latino Alliance chairs, to support diversity, equity and inclusion

## 2023 Focus

- Scale our leadership position in private wealth advisory services across North America to plan, grow, protect and transition our clients' wealth with confidence
- Extend our advantage as a solutions provider, expanding asset management and insurance offerings in key growth areas, including environmental, social and governance (ESG) and climate-focused offerings
- Deliver a top-tier digital wealth management offering, building on our differentiated digital advisory capabilities to provide an enhanced client experience, including streamlined processes that deliver efficiencies and value
- Provide One Client leadership to improve delivery of services and products to our clients across BMO
- Foster a winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

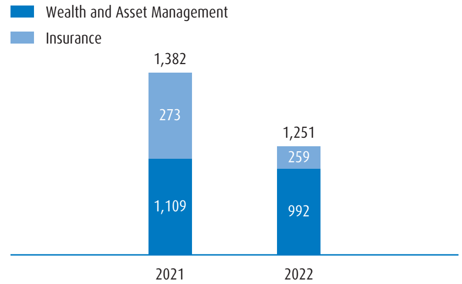
## BMO Wealth Management (1)

| (Canadian $ in millions, except as noted)<br>As at or for the year ended October 31 | 2022 | 2021 |
|---|---|---|
| Net interest income | **1,188** | 982 |
| Non-interest revenue | **3,336** | 6,071 |
| Total revenue | **4,524** | 7,053 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **(683)** | 1,399 |
| Revenue, net of CCPB | **5,207** | 5,654 |
| Provision for credit losses on impaired loans | **2** | 4 |
| Provision for (recovery of) credit losses on performing loans | **(4)** | (16) |
| Total provision for (recovery of) credit losses | **(2)** | (12) |
| Non-interest expense | **3,564** | 3,843 |
| Income before income taxes | **1,645** | 1,823 |
| Provision for income taxes | **394** | 441 |
| Reported net income | **1,251** | 1,382 |
| Amortization of acquisition-related intangible assets (2) | **3** | 24 |
| Adjusted net income | **1,254** | 1,406 |
| Adjusted non-interest expense | **3,559** | 3,812 |
| **Key Performance Metrics and Drivers** | | |
| Wealth and Asset Management reported net income (3) | **992** | 1,109 |
| Wealth and Asset Management adjusted net income (3) | **995** | 1,133 |
| Insurance net income (loss) | **259** | 273 |
| Net income growth (%) | **(9.5)** | 37.9 |
| Adjusted net income growth (%) | **(10.7)** | 35.7 |
| Revenue growth (%) | **(35.8)** | 5.1 |
| Revenue growth, net of CCPB (%) | **(7.9)** | 13.1 |
| Non-interest expense growth (%) | **(7.2)** | 5.3 |
| Adjusted non-interest expense growth (%) | **(6.6)** | 5.8 |
| Return on equity (%) (4) | **23.5** | 23.3 |
| Adjusted return on equity (%) (4) | **23.6** | 23.7 |
| Operating leverage, net of CCPB (%) | **(0.7)** | 7.8 |
| Adjusted operating leverage, net of CCPB (%) | **(1.3)** | 7.3 |
| Reported efficiency ratio (%) | **78.8** | 54.5 |
| Adjusted efficiency ratio, net of CCPB (%) | **68.4** | 67.4 |
| Average common equity | **5,282** | 5,899 |
| Average assets | **50,488** | 48,232 |
| Average gross loans and acceptances | **34,007** | 28,920 |
| Average net loans and acceptances | **33,974** | 28,880 |
| Average deposits | **55,919** | 51,030 |
| Assets under administration (5) | **424,191** | 427,446 |
| Assets under management | **305,462** | 523,270 |
| Full-time equivalent employees | **6,124** | 6,324 |
| **U.S. Business Select Financial Data** (US$ in millions) | | |
| Total revenue | **576** | 625 |
| Non-interest expense | **458** | 481 |
| Reported net income | **91** | 111 |
| Adjusted non-interest expense | **454** | 474 |
| Adjusted net income | **94** | 116 |
| Average gross loans and acceptances | **5,937** | 4,892 |
| Average deposits | **7,528** | 7,321 |

(1) Revenue measures, net of CCPB, adjusted results and ratios in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Amortization of acquisition-related intangible assets pre-tax amounts of $5 million in fiscal 2022 and $31 million in fiscal 2021 are recorded in non-interest expense.
(3) Wealth and Asset Management was previously known as Traditional Wealth.
(4) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.
(5) Certain assets under management that are also administered by BMO are included in assets under administration.

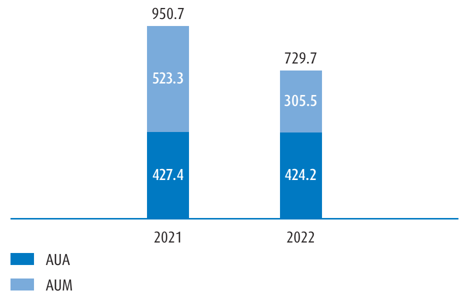
### Reported Net Income

($ millions)



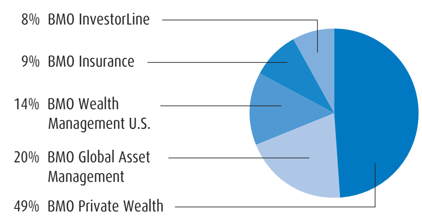

### AUA and AUM

($ billions)




### 2022 Net Revenue by Line of Business

(%)



## Financial Review

BMO Wealth Management reported net income was $1,251 million, compared with $1,382 million in the prior year. The decrease was partially due to divestitures that reduced net income growth by 2%, with higher underlying revenue more than offset by higher underlying expenses. Wealth and Asset Management reported net income was $992 million, a decrease of $117 million or 11% from the prior year, and Insurance net income was $259 million, a decrease of $14 million or 5%.

We present revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and we calculate our efficiency ratio and operating leverage on a similar basis. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets, which is largely offset in CCPB. Presenting our revenue, efficiency ratio and operating leverage on a net basis allows for a better assessment of operating results.

Total revenue was $4,524 million, compared with $7,053 million in the prior year. Revenue, net of CCPB, was $5,207 million, a decrease of $447 million or 8%. Revenue in Wealth and Asset Management was $4,752 million, a decrease of $426 million or 8% from the prior year due to divestitures. Underlying revenue growth of 5% was driven by higher net interest income due to strong deposit and loan growth and higher net interest margins, as well as the benefit from growth in net new client assets, partially offset by lower online brokerage transaction revenue and the impact of weaker global markets. Insurance revenue, net of CCPB, was $455 million, a decrease of $21 million or 5% from the prior year, primarily due to less favourable market movements in the current year relative to the prior year.

The total recovery of provisions for credit losses was $2 million, compared with a recovery of $12 million in the prior year. The provision for credit losses on impaired loans decreased by $2 million from the prior year. There was a $4 million recovery of the provision for credit losses on performing loans in the current year, compared with a recovery of $16 million in the prior year.

Reported non-interest expense was $3,564 million, a decrease of $279 million or 7% from the prior year, as higher revenue-based costs and investments in the business, including higher technology and sales force costs, were more than offset by divestitures and a legal provision in the prior year.

Assets under management decreased $217.8 billion or 42%, and assets under administration decreased $3.3 billion or 1% from the prior year, primarily due to divestitures and the impact of weaker global markets, partially offset by favourable foreign exchange rate movements and higher underlying net new client assets. Average gross loans and average deposits increased 18% and 10%, respectively.

For further information on non-GAAP amounts, measures and ratios in this 2022 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

## Business Environment and Outlook

In the first half of fiscal 2022, BMO Wealth Management results benefitted from strong equity markets and economic growth. However, business performance in the second half of the year was impacted by market volatility, resulting in lower levels of assets under administration and management, while rising interest rates resulted in wider margins. We continue to provide our clients with expert advice as we assist them in navigating volatile and uncertain market conditions. We have introduced new and differentiated products, and enhanced our digital advisory capabilities, all of which drove robust growth in net new assets, loans and deposits. Online brokerage transaction levels continued to moderate in fiscal 2022 compared with the prior year, but are expected to remain above pre-pandemic levels.

The outlook for equity markets and the economy is shifting rapidly and continues to be impacted by supply-chain disruptions, labour shortages, inflation and geopolitical tensions. Interest rates are expected to continue to rise as Canadian and U.S. monetary authorities attempt to combat inflation, which would positively affect deposit margins. However, continued market volatility and near-term recessionary risks may constrain our overall business performance.

The wealth management industry has attractive growth potential, and competitors in this market continue to invest heavily in advisory capabilities, product innovation, technology, and mergers and acquisitions to drive growth and meet customers' evolving needs. We are well-positioned to benefit from emerging trends, including the accelerated adoption of digital channels, with our integrated business model, strong client loyalty and expanded sales forces in Canada and the United States.

We continue to invest in technology to enhance client experiences and improve the productivity of our investment advisors and private bankers. BMO InvestorLine continues to attract new clients through digital platform enhancements and is expanding access to adviceDirect® to more Canadians, with a lower minimum investment balance required for entry. In addition, we continue to build on our Canadian asset management team and capabilities to accelerate growth and diversify our product offerings for both retail and institutional clients.

The Canadian and U.S. economic environment in calendar 2022 and the outlook for calendar 2023 are discussed in more detail in the Economic Developments and Outlook section.

**Caution**

This BMO Wealth Management section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# BMO Capital Markets

BMO Capital Markets is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. BMO Capital Markets has approximately 2,800 professionals in 32 locations around the world, including 18 offices in North America.

## Lines of Business

**Investment and Corporate Banking** offers debt and equity capital-raising services to clients, as well as loan origination and syndication, balance sheet management solutions and treasury management services. The division also provides clients with strategic advice on mergers and acquisitions (M&A), restructurings and recapitalizations, trade finance and risk mitigation services to support international business activities, and a wide range of banking and other operating services tailored to North American and international financial institutions.

**Global Markets** offers research and access to financial markets for institutional, corporate and retail clients through an integrated suite of sales and trading solutions that include debt, foreign exchange, interest rate, credit, equity, securitization and commodities. New product development and origination services are also offered, as well as risk management and advisory services to hedge against fluctuations in a variety of key factors, including interest rates, foreign exchange rates and commodities prices. In addition, Global Markets provides funding and liquidity management services to clients.

## Strategy and Key Priorities

### 2022 Priorities and Achievements

**Key Priority:** Accelerate growth in areas where we are well-positioned and have the expertise and capabilities to deliver value-added solutions and provide an enhanced client experience

**Achievements**

- Continued to play a market-leading role in mergers and acquisitions (M&A) with our strong global expertise across sectors and our deep client relationships, advising on landmark transactions, such as the acquisition of Kansas City Southern by CP Rail and the combination of Kirkland Lake Gold with Agnico Eagle
- Expanded our commercial mortgage-backed securities (CMBS) offering with our first securitization of USD commercial real estate mortgage loans through a new public issuance shelf
- Announced our registration as a Securities Licensed company in Japan, marking the expansion of our footprint in the world's third-largest economy and Canada's fourth-largest export partner
- Supported clients with top-tier market insights and led high-profile initial public offerings, including the TSX's largest IPO in fiscal 2022, for Definity Financial Corporation
- Maintained our global leadership position in the metals and mining sector, advising on the largest gold M&A transaction in history, and recognized by *Global Finance* magazine for the 13th consecutive year as the World's Best Metals & Mining Investment Bank
- Delivered strong institutional product performance across Global Markets
  - Achieved top rankings [(1)] in U.S. sovereign, supranational and agency (SSA) issuances, Canadian corporate bonds, Canadian options, Canadian exchange traded funds, trading and structured notes
  - Recognized as a top-10 bookrunner in CMBS and a top-2 in U.S. agency collateralized mortgage obligations (CMO)
  - Ranked #1 in U.S. Rates Strategy and earned recognition as a top-tier flow rates platform with focused digital enhancements and expanded distribution
- Received the 2022 U.S. Markets Choice Award in Equities for Best Sell-Side Trading Desk

(1) Ranking as in Bloomberg Professional Services' league tables.

## **Key Priority:** Become an industry leader in sustainable finance, providing advice and innovative solutions to help our clients reach their environmental, social and governance objectives

**Achievements**

- Accelerated progress on our climate agenda with the announced acquisition of Radicle Group, one of Canada's largest developers of carbon offsets and a market leader in environmental services
- Continued to deliver on our commitment of deploying $300 billion in sustainable lending and underwriting by 2025
  - Partnered with Bruce Power to develop the world's first green nuclear financing framework and supported the issuance of its Green Bonds for nuclear power, and supported Capital Power in its green hybrid transaction issuance – the first of its kind in Canada
  - Led all Canadian companies as the first to partner with Breakthrough Energy Catalyst and its philanthropic and private-sector partners to accelerate the shift to clean technologies and climate solutions
- Continued to drive innovation in sustainable finance solutions, entering into a partnership with Export Development Canada for energy transition lending, and raised funds to plant 150,000 trees, furthering our reforestation efforts
- Sponsored key industry climate events, including the Climate Action Sustainable Innovation Forum and Bloomberg Sustainable Finance Week, and provided leadership on sustainable finance
- Increased our commitment of funding for the BMO Impact Investment Fund to $350 million, investing in six portfolio companies across three verticals, with a focus on decarbonization, the circular economy and AgTech
- Supported the largest energy-related Indigenous economic partnership transaction in North America, which involved Athabasca Indigenous Investments (Aii) and Enbridge

## **Key Priority:** Deploy digital-first capabilities with an increased focus on data, analytics and artificial intelligence to drive simplification and scale

**Achievements**

- Expanded our digital capabilities, launching our electronic trading capabilities into Europe and enhancing our platform with algorithmic trading and market structure expertise
- Enhanced data insights and developed digital tools to optimize and manage resources dynamically, enabling better data-driven decisions
- Deployed innovative technology enhancements to connect our coverage across lines of business, and implemented workflow tools and process automation to increase employee productivity, including an employee-led Million Hour Challenge that resulted in more than 300 time-saving innovations and initiatives
- Drove higher levels of client engagement with differentiated insights and connectivity options through digital marketing events, such as LinkedIn Live, and social media

## **Key Priority:** Foster and drive an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

**Achievements**

- Achieved strong employee engagement index above the leading companies' benchmark (1), with improved results across all areas, and reached a top-quartile culture ranking, placing us among the best financial institutions surveyed globally
- Invested in talent, adding key leaders in high-growth areas and attracting, developing and retaining talent through expanded partnerships and mentorship opportunities
- Advanced our diversity, equity and inclusion strategy and improved the representation of diversity in senior leadership roles
- Enhanced our workplaces and technology, and introduced a flexible hybrid work model focused on alignment, empowerment and recognition with a greater emphasis on employee well-being and mental health
- Continued our commitment to Zero Barriers to Inclusion, supporting charitable organizations and causes in our local communities, with record levels of fund-raising for employee giving, supporting our Equity Through Education and Trees from Trades programs

### 2023 Focus

- Drive client-focused growth and activate and scale a One Client approach, with improved connectivity and integrated offerings across BMO to deliver greater value and a better experience for our clients
- Be an industry leader in sustainable finance and lead partner in our clients' transition to a net zero world
- Deploy digital-first capabilities and solutions for speed, scale and simplification
- Foster a winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

(1) Source: BMO Ambition 2025 Winning Culture Checkup | Qualtrics, 2022.

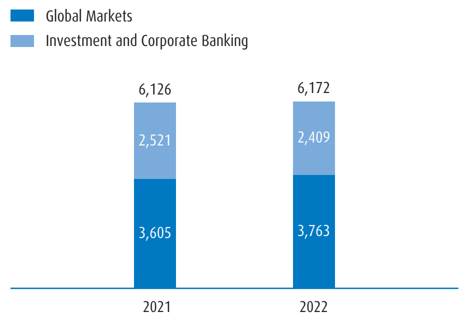
## BMO Capital Markets (1)

| (Canadian $ in millions, except as noted)<br>As at or for the year ended October 31 | 2022 | 2021 |
|---|---|---|
| Net interest income (teb) (2) | **3,197** | 3,115 |
| Non-interest revenue | **2,975** | 3,011 |
| Total revenue (teb) | **6,172** | 6,126 |
| Provision for (recovery of) credit losses on impaired loans | **(32)** | 11 |
| Provision for (recovery of) credit losses on performing loans | **(11)** | (205) |
| Total provision for (recovery of) credit losses | **(43)** | (194) |
| Non-interest expense | **3,855** | 3,462 |
| Income before income taxes | **2,360** | 2,858 |
| Provision for income taxes (teb) | **588** | 738 |
| Reported net income | **1,772** | 2,120 |
| Acquisition and integration costs (3) | **8** | 7 |
| Amortization of acquisition-related intangible assets (4) | **14** | 17 |
| Adjusted net income | **1,794** | 2,144 |
| Adjusted non-interest expense | **3,826** | 3,431 |
| **Key Performance Metrics and Drivers** | | |
| Global Markets revenue | **3,763** | 3,605 |
| Investment and Corporate Banking revenue | **2,409** | 2,521 |
| Net income growth (%) | **(16.5)** | 94.1 |
| Adjusted net income growth (%) | **(16.4)** | 91.3 |
| Revenue growth (%) | **0.7** | 15.0 |
| Non-interest expense growth (%) | **11.3** | 7.3 |
| Adjusted non-interest expense growth (%) | **11.5** | 7.5 |
| Return on equity (%) (5) | **14.9** | 19.1 |
| Adjusted return on equity (%) (5) | **15.1** | 19.3 |
| Operating leverage (teb) (%) | **(10.6)** | 7.7 |
| Adjusted operating leverage (teb) (%) | **(10.8)** | 7.5 |
| Efficiency ratio (teb) (%) | **62.5** | 56.5 |
| Adjusted efficiency ratio (teb) (%) | **62.0** | 56.0 |
| Average common equity | **11,602** | 10,913 |
| Average assets | **404,728** | 372,475 |
| Average gross loans and acceptances | **63,254** | 59,385 |
| Average net loans and acceptances | **62,986** | 58,909 |
| Full-time equivalent employees | **2,815** | 2,591 |
| **U.S. Business Select Financial Data** (US$ in millions) | | |
| Total revenue (teb) | **2,010** | 2,373 |
| Non-interest expense | **1,471** | 1,317 |
| Reported net income | **415** | 836 |
| Adjusted non-interest expense | **1,450** | 1,292 |
| Adjusted net income | **431** | 855 |
| Average assets | **141,506** | 127,619 |
| Average gross loans and acceptances | **25,118** | 25,480 |

(1) Adjusted results and ratios and teb amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Taxable equivalent basis amounts of $245 million in fiscal 2022 and $291 million in fiscal 2021 are recorded in net interest income.
(3) KGS-Alpha and Clearpool pre-tax acquisition and integration costs of $10 million in fiscal 2022 and $9 million in fiscal 2021 are recorded in non-interest expense.
(4) Amortization of acquisition-related intangible assets pre-tax amounts of $19 million in fiscal 2022 and $22 million in fiscal 2021 are recorded in non-interest expense.
(5) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.

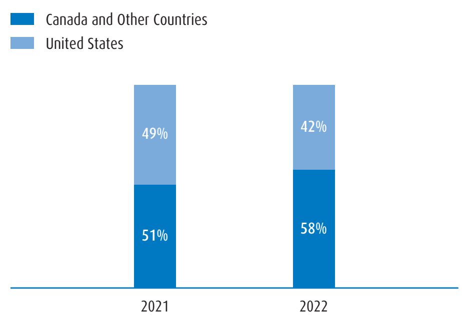
### Revenue by Line of Business (teb)

($ millions)




### Revenue by Geography

(%)



## Financial Review

BMO Capital Markets reported net income was $1,772 million, a decrease of $348 million or 16% from the prior year. Results were driven by higher revenue, more than offset by higher expenses and a lower recovery of provisions for credit losses compared with the prior year.

Revenue was $6,172 million, an increase of $46 million or 1% from the prior year. Global Markets revenue increased $158 million or 4%, primarily due to higher foreign exchange, equities and commodities trading revenue and the impact of the stronger U.S. dollar, partially offset by lower interest rate trading revenue and lower levels of new equity and debt issuances. Investment and Corporate Banking revenue decreased $112 million or 4%, primarily due to lower net securities gains, lower underwriting and advisory revenue reflecting lower levels of client activity given market conditions, and mark-downs on loan underwriting commitments, largely in the United States, resulting from a widening of credit spreads, partially offset by higher corporate banking-related revenue and the impact of the stronger U.S. dollar.

The total recovery of provisions for credit losses was $43 million, compared with a recovery of $194 million in the prior year. The recovery of the provision for credit losses on impaired loans was $32 million, compared with a provision of $11 million in the prior year. The recovery of the provision for credit losses on performing loans was $11 million, compared with a recovery of $205 million in the prior year.

Non-interest expense was $3,855 million, an increase of $393 million or 11% from the prior year. The increase was driven by continued investments in the business, including technology costs, higher employee-related costs, including severance, higher operating expenses and the impact of the stronger U.S. dollar.

Average gross loans and acceptances increased $3.9 billion or 7% from the prior year to $63.3 billion, primarily due to higher levels of lending activity across loan portfolios and the impact of the stronger U.S. dollar, partially offset by the impact of the deconsolidation of our customer securitization vehicle in the United States and the wind-down of our non-Canadian energy portfolio.

For further information on non-GAAP amounts, measures and ratios in this 2022 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.



## Business Environment and Outlook

In fiscal 2022, the global operating landscape reflected a rapidly changing economic and market environment. BMO Capital Markets' performance in the first half of fiscal 2022 benefitted from elevated levels of client activity, robust equity prices and favourable market conditions for investment banking services, while the latter half of fiscal 2022 reflected a reduction in client activity in light of more challenging market conditions, with rising interest rates, widening credit spreads and increased volatility leading to lower underwriting and advisory fee revenue.

Uncertainty about the economic recovery and concerns about a recession affect the outlook for fiscal 2023. High inflation rates, waning corporate confidence, volatile markets and the conflict in Ukraine are expected to generate headwinds for the financial services industry and our business. Investment Banking and Corporate Banking activity is expected to continue to reflect challenges across debt and equity markets, as well as a cautious merger and acquisition environment. Activity in the Global Markets origination and refinancing businesses is expected to remain muted in the near term.

BMO Capital Markets' strategy remains unchanged: a sharp focus on clients, aiming to be their valued financial partner – leveraging talent, innovative solutions and capital to help them achieve their goals, while deploying digital-first solutions that drive simplification and scale. With a leading position in Canada and strong momentum in the United States, our investments in product offerings and capabilities, particularly where BMO has core strengths and opportunities, are building a solid foundation for profitable growth and sustainable returns. In addition, we continue to make progress on sustainability, a core part of our strategy, providing innovative financing solutions and advice to support clients in their transition to a more sustainable economy. BMO Capital Markets' disciplined and integrated approach to risk management, along with continued investments in technology infrastructure, is expected to position the business to adapt to evolving regulatory and compliance requirements in the coming years.

The Canadian and U.S. economic environment in calendar 2022 and the outlook for calendar 2023 are discussed in more detail in the Economic Developments and Outlook section.

**Caution**

This BMO Capital Markets section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Corporate Services, including Technology and Operations

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, treasury, finance, legal and regulatory compliance, sustainability, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology, including data and analytics, and provides cybersecurity and operations services.

Corporate Services focuses on enterprise-wide priorities related to maintaining a sound risk management and internal control environment and regulatory compliance, including the management, assessment and monitoring of BMO's investment portfolios, funding, liquidity and capital activities, and exposure to credit, foreign exchange and interest rate risks. In support of the operating segments, Corporate Services develops and implements enterprise-wide processes, systems and controls to maintain operating efficiency and enable our businesses to adapt and meet their customer experience objectives.

The costs of Corporate Units and T&O services are largely allocated to the four operating segments (Canadian P&C, U.S. P&C, BMO Wealth Management and BMO Capital Markets), with any remaining amounts retained in Corporate Services results. As such, Corporate Services results largely reflect the impact of residual treasury-related activities, the elimination of taxable equivalent adjustments, and residual unallocated expenses.

**Achievements**

- Continued to advance our Digital First capabilities, augmenting our agility, cloud engineering and analytics. Used cloud computing to compress the computing time for an initial set of risk and regulatory reports
- Maintained a well-defined trajectory for cloud adoption. Notable examples of cloud migration include Transportation Finance, selected market and credit risk use cases, and a first set of application programming interfaces (APIs) that will grow over time. Developed the security and monitoring capabilities to secure our environment and adapt to a changing threat landscape
- Evolved our Financial Crimes Unit (FCU) to respond to heightened cyber, fraud and physical security requirements. Technology, people and process areas of focus included enhancing detection and response capabilities, improving identity and access management, and building resilience against virtual and physical attacks
- Further enhanced our ability to aggregate, mine and analyze data, and developed several new examples of business processes driven by artificial intelligence (AI). Continued to track a suite of emerging technologies as we seek to move from awareness to proof of concept, followed by wider adoption, where appropriate
- Drove high levels of uptime and availability for customer-facing technology and improved our ability to monitor, detect and automate responses to potential issues

## Corporate Services, including Technology and Operations (1)

| (Canadian $ in millions, except as noted)<br>As at or for the year ended October 31 | 2022 | 2021 |
|---|---|---|
| Net interest income before group teb offset | **(716)** | (301) |
| Group teb offset | **(270)** | (315) |
| Net interest income (teb) | **(986)** | (616) |
| Non-interest revenue | **7,830** | 326 |
| Total revenue (teb) | **6,844** | (290) |
| Provision for (recovery of) credit losses on impaired loans | **(7)** | (5) |
| Provision for (recovery of) credit losses on performing loans | **7** | (2) |
| Total provision for (recovery of) credit losses | **–** | (7) |
| Non-interest expense | **1,383** | 1,423 |
| Income (loss) before income taxes | **5,461** | (1,706) |
| Provision for (recovery of) income taxes (teb) | **1,270** | (494) |
| Reported net income (loss) | **4,191** | (1,212) |
| Acquisition and integration costs (2) | **237** | – |
| Impact of divestitures (3) | **55** | 842 |
| Management of fair value changes on the purchase of Bank of the West (4) | **(5,667)** | – |
| Restructuring costs (reversals) (5) | **–** | (18) |
| Legal provision (6) | **846** | – |
| Adjusted net loss | **(338)** | (388) |
| Adjusted total revenue (teb) (7) | **(333)** | (319) |
| Adjusted non-interest expense (7) | **424** | 561 |
| Full-time equivalent employees | **15,486** | 13,819 |
| **U.S. Business Select Financial Data** (US$ in millions) | | |
| Total revenue | **5,604** | (26) |
| Total provision for (recovery of) credit losses | **(4)** | (6) |
| Non-interest expense | **686** | 148 |
| Provision for (recovery of) income taxes (teb) | **1,282** | (80) |
| Reported net income (loss) | **3,640** | (88) |
| Adjusted total revenue | **106** | (26) |
| Adjusted non-interest expense | **44** | 130 |
| Adjusted net income (loss) | **83** | (74) |

(1) Adjusted results and ratios, and teb amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

(2) Fiscal 2022 reported net income included acquisition and integration costs related to the announced acquisition of Bank of the West of $237 million ($316 million pre-tax) recorded in non-interest expense.

(3) Reported net income included the impact of divestitures related to the sale of our EMEA Asset Management business and our Private Banking business in Hong Kong and Singapore. Fiscal 2022 reported net income included a gain of $6 million ($8 million pre-tax) related to the transfer of certain U.S. asset management clients and a $29 million pre-tax and after-tax loss related to foreign currency translation reclassified from accumulated other comprehensive income, both recorded in non-interest revenue, and expenses of $32 million ($16 million pre-tax), including taxes of $22 million on closing of the sale of our EMEA Asset Management business recorded in non-interest expense. Fiscal 2021 reported net income included a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.

(4) Fiscal 2022 reported net income included revenue of $5,667 million ($7,713 million pre-tax) related to the announced acquisition of Bank of the West resulting from the management of the impact of interest rate changes between the announcement and closing on its fair value and goodwill, comprising $7,665 million of pre-tax mark-to-market gains on certain interest rate swaps recorded in non-interest trading revenue and $48 million of pre-tax non-trading interest income on a portfolio of primarily U.S. treasury securities recorded in net interest income. For further information on this acquisition, refer to the Significant Events section.

(5) Fiscal 2021 reported net income included a partial reversal of $18 million ($24 million pre-tax) of restructuring charges related to severance recorded in 2019, in non-interest expense.

(6) Fiscal 2022 reported net income included a legal provision of $846 million ($1,142 million pre-tax) related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank, comprising interest expense of $515 million pre-tax and non-interest expense of $627 million pre-tax, including legal fees of $22 million. For further information, refer to the Provisions and Contingent Liabilities section in Note 24 of the consolidated financial statements.

(7) Adjusted results exclude the impact of the items described in footnotes (2) and (6).

# Financial Review

Corporate Services reported net income was $4,191 million, compared with a reported net loss of $1,212 million in the prior year.

Results in the current year included the impact of the announced acquisition of Bank of the West, including revenue related to the management of the impact of interest rate changes between the announcement and the closing of the acquisition on its fair value and goodwill, and related acquisition and integration costs. In addition, the current year included a legal provision related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank, the impact of divestitures related to the sale of our EMEA Asset Management business and the transfer of the assets of certain U.S. asset management clients.

In the prior year, reported net loss reflected the impact of divestitures, including the write-down of goodwill related to the sale of our EMEA Asset Management business, a gain on the sale of our Private Banking business in Hong Kong and Singapore, and divestiture-related costs for both transactions, as well as a partial reversal of restructuring charges related to severance recorded in 2019.

Adjusted net loss was $338 million, compared with an adjusted net loss of $388 million in the prior year. Adjusted results increased due to lower expenses, partially offset by lower revenue.

For further information on non-GAAP amounts, measures and ratios in this 2022 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

# Summary Quarterly Earnings Trends

## Summarized Statement of Income and Quarterly Financial Measures (1)

| (Canadian $ in millions, except as noted) | Q4-2022 | Q3-2022 | Q2-2022 | Q1-2022 | Q4-2021 | Q3-2021 | Q2-2021 | Q1-2021 |
|---|---|---|---|---|---|---|---|---|
| Net interest income (teb) | **3,767** | **4,197** | **3,902** | **4,019** | 3,756 | 3,521 | 3,455 | 3,578 |
| Non-interest revenue | **6,803** | **1,902** | **5,416** | **3,704** | 2,817 | 4,041 | 2,621 | 3,397 |
| Revenue (1) | **10,570** | **6,099** | **9,318** | **7,723** | 6,573 | 7,562 | 6,076 | 6,975 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **(369)** | **413** | **(808)** | **81** | 97 | 984 | (283) | 601 |
| Revenue, net of CCPB (1) | **10,939** | **5,686** | **10,126** | **7,642** | 6,476 | 6,578 | 6,359 | 6,374 |
| Provision for credit losses on impaired loans | **192** | **104** | **120** | **86** | 84 | 71 | 155 | 215 |
| Provision for (recovery of) credit losses on performing loans | **34** | **32** | **(70)** | **(185)** | (210) | (141) | (95) | (59) |
| Total provision for (recovery of) credit losses | **226** | **136** | **50** | **(99)** | (126) | (70) | 60 | 156 |
| Non-interest expense (1) | **4,776** | **3,859** | **3,713** | **3,846** | 3,803 | 3,684 | 4,409 | 3,613 |
| Income before income taxes | **5,937** | **1,691** | **6,363** | **3,895** | 2,799 | 2,964 | 1,890 | 2,605 |
| Provision for income taxes | **1,454** | **326** | **1,607** | **962** | 640 | 689 | 587 | 588 |
| Reported net income (see below) | **4,483** | **1,365** | **4,756** | **2,933** | 2,159 | 2,275 | 1,303 | 2,017 |
| Acquisition and integration costs (2) | **145** | **62** | **28** | **10** | 1 | 2 | 2 | 2 |
| Amortization of acquisition-related intangible assets (3) | **6** | **5** | **6** | **6** | 14 | 15 | 18 | 19 |
| Impact of divestitures (4) | **(8)** | **6** | **9** | **48** | 52 | 18 | 772 | – |
| Management of fair value changes on the purchase of Bank of the West (5) | **(3,336)** | **694** | **(2,612)** | **(413)** | – | – | – | – |
| Restructuring costs (reversals) (6) | **–** | **–** | **–** | **–** | – | (18) | – | – |
| Legal provision (7) | **846** | **–** | **–** | **–** | – | – | – | – |
| Adjusted net income (see below) | **2,136** | **2,132** | **2,187** | **2,584** | 2,226 | 2,292 | 2,095 | 2,038 |
| **Operating group reported net income** | | | | | | | | |
| Canadian P&C reported net income | **917** | **965** | **940** | **1,004** | 933 | 828 | 777 | 750 |
| Amortization of acquisition-related intangible assets (3) | **–** | **–** | **1** | **–** | – | – | 1 | – |
| Canadian P&C adjusted net income | **917** | **965** | **941** | **1,004** | 933 | 828 | 778 | 750 |
| U.S. P&C reported net income | **660** | **568** | **588** | **681** | 509 | 550 | 538 | 579 |
| Amortization of acquisition-related intangible assets (3) | **2** | **1** | **1** | **1** | 6 | 6 | 5 | 7 |
| U.S. P&C adjusted net income | **662** | **569** | **589** | **682** | 515 | 556 | 543 | 586 |
| BMO Wealth Management reported net income | **298** | **324** | **314** | **315** | 345 | 379 | 322 | 336 |
| Amortization of acquisition-related intangible assets (3) | **–** | **1** | **1** | **1** | 4 | 5 | 7 | 8 |
| BMO Wealth Management adjusted net income | **298** | **325** | **315** | **316** | 349 | 384 | 329 | 344 |
| BMO Capital Markets reported net income | **357** | **262** | **448** | **705** | 531 | 553 | 558 | 478 |
| Acquisition and integration costs (2) | **2** | **1** | **2** | **3** | 1 | 2 | 2 | 2 |
| Amortization of acquisition-related intangible assets (3) | **4** | **3** | **3** | **4** | 4 | 4 | 5 | 4 |
| BMO Capital Markets adjusted net income | **363** | **266** | **453** | **712** | 536 | 559 | 565 | 484 |
| Corporate Services reported net income (loss) | **2,251** | **(754)** | **2,466** | **228** | (159) | (35) | (892) | (126) |
| Acquisition and integration costs (2) | **143** | **61** | **26** | **7** | – | – | – | – |
| Impact of divestitures (4) | **(8)** | **6** | **9** | **48** | 52 | 18 | 772 | – |
| Management of fair value changes on the purchase of Bank of the West (5) | **(3,336)** | **694** | **(2,612)** | **(413)** | – | – | – | – |
| Restructuring costs (reversals) (6) | **–** | **–** | **–** | **–** | – | (18) | – | – |
| Legal provision (7) | **846** | **–** | **–** | **–** | – | – | – | – |
| Corporate Services adjusted net income (loss) | **(104)** | **7** | **(111)** | **(130)** | (107) | (35) | (120) | (126) |
| Basic earnings per share ($) (8) (9) | **6.52** | **1.96** | **7.15** | **4.44** | 3.24 | 3.42 | 1.91 | 3.03 |
| Diluted earnings per share ($) (8) (9) | **6.51** | **1.95** | **7.13** | **4.43** | 3.23 | 3.41 | 1.91 | 3.03 |
| Adjusted diluted earnings per share ($) | **3.04** | **3.09** | **3.23** | **3.89** | 3.33 | 3.44 | 3.13 | 3.06 |
| Net interest margin on average earning assets (%) | **1.46** | **1.71** | **1.69** | **1.64** | 1.62 | 1.57 | 1.59 | 1.59 |
| PCL-to-average net loans and acceptances (annualized) (%) | **0.16** | **0.10** | **0.04** | **(0.08)** | (0.11) | (0.06) | 0.05 | 0.14 |
| PCL on impaired loans-to-average net loans and acceptances (annualized) (%) | **0.14** | **0.08** | **0.10** | **0.07** | 0.07 | 0.06 | 0.13 | 0.19 |
| Effective tax rate (%) | **24.5** | **19.3** | **25.2** | **24.7** | 22.9 | 23.2 | 31.1 | 22.6 |
| Adjusted effective tax rate (%) | **21.8** | **22.0** | **23.6** | **23.5** | 22.7 | 23.2 | 22.1 | 22.6 |
| Canadian/U.S. dollar average exchange rate ($) | **1.3516** | **1.2774** | **1.2665** | **1.2710** | 1.2546 | 1.2316 | 1.2512 | 1.2841 |

(1) Revenue measures, net of CCPB, adjusted results and ratios, teb amounts and U.S. dollar amounts are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

(2) Acquisition and integration costs related to KGS-Alpha and Clearpool are reported in BMO Capital Markets. Acquisition and integration costs are recorded in non-interest expense.

(3) Amortization of acquisition-related intangible assets was charged to non-interest expense in the related operating group.

(4) Reported net income included the impact of divestitures related to the sale of our EMEA Asset Management business and our Private Banking business in Hong Kong and Singapore. The impact of the sale of our EMEA Asset Management business comprised the following in fiscal 2022: Q4-2022 included an expense recovery of $8 million ($6 million pre-tax); Q3-2022 included expenses of $6 million ($7 million pre-tax); Q2-2022 included a gain of $6 million ($8 million pre-tax) related to the transfer of certain U.S. asset management clients recorded in revenue and expenses of $15 million ($18 million pre-tax); and Q1-2022 included a $29 million (pre-tax and after-tax) loss related to foreign currency translation reclassified from accumulated other comprehensive income to non-interest revenue, a $3 million pre-tax net recovery of non-interest expense, including taxes of $22 million on closing of the sale of our EMEA Asset Management business. Divestitures in fiscal 2021 comprised the following: Q4-2021 included expenses of $52 million ($62 million pre-tax) related to the sale of our EMEA Asset Management business; Q3-2021 included expenses of $18 million ($24 million pre-tax) related to the sale of our EMEA Asset Management business and the sale of our Private Banking business in Hong Kong and Singapore; Q2-2021 included a $747 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, a $22 million ($29 million pre-tax) gain on the sale of our Private Banking business, and $47 million ($53 million pre-tax) of divestiture-related costs for both transactions – the gain on the sale was recorded in revenue and the goodwill write-down and divestiture costs were recorded in non-interest expense in Corporate Services.

(5) Reported net income included revenue (losses) related to the announced acquisition of Bank of the West resulting from the management of the impact of interest rate changes between the announcement and closing on its fair value and goodwill: Q4-2022 included revenue of $3,336 million ($4,541 million pre-tax), comprising $4,698 million of pre-tax mark-to-market revenue on certain interest rate swaps recorded in non-interest trading revenue and a loss of $157 million pre-tax in net interest income on a portfolio of primarily U.S. treasury securities recorded in net interest income; Q3-2022 included a loss of $694 million ($945 million pre-tax), comprising $983 million of pre-tax mark-to-market non-interest losses and $38 million of pre-tax interest income on a portfolio of primarily U.S. treasury securities recorded in net interest income; Q2-2022 included revenue of $2,612 million ($3,555 million pre-tax), comprising $3,433 million of pre-tax mark-to-market gains and $122 million of pre-tax net interest income; and Q1-2022 included revenue of $413 million ($562 million pre-tax), comprising $517 million of pre-tax mark-to-market gains and $45 million of pre-tax interest income. For further information on this acquisition, refer to the Significant Events section.

(6) Q3-2021 reported net income included a partial reversal of $18 million ($24 million pre-tax) of restructuring charges related to severance recorded in 2019 in non-interest expense, in Corporate Services.

(7) Q4-2022 reported net income included a legal provision of $846 million ($1,142 million pre-tax) related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank, comprising net interest expense of $515 million pre-tax and non-interest expense of $627 million pre-tax, including legal fees of $22 million. These amounts were recorded in Corporate Services. For further information, refer to the Provisions and Contingent Liabilities section in Note 24 of the consolidated financial statements.

(8) Earnings per share (EPS) is calculated using net income after deducting total dividends on preferred shares and distributions on other equity instruments. For further information on EPS, refer to Note 23 of the consolidated financial statements.

(9) Net income and earnings from our business operations are attributable to shareholders by way of EPS and diluted EPS. Adjusted EPS and adjusted diluted EPS are non-GAAP measures. For further information, refer to the Non-GAAP and Other Financial Measures section.

Earnings in certain quarters are impacted by modest seasonal factors. The first quarter includes higher employee expenses related to employee benefits and stock-based compensation for employees eligible to retire. The second quarter has fewer days relative to other quarters, which reduces certain revenue and expense amounts. Quarterly earnings are also impacted by foreign exchange translation. Divestitures in BMO Wealth Management reduced overall revenue and expenses in 2022 relative to 2021.

Reported results in 2022 included the impact of the announced acquisition of Bank of the West, comprising revenue (losses) related to fair value management actions, as well as acquisition and integration costs. The current quarter included a legal provision. Results over the last seven quarters included the impact of divestitures, including a write-down of goodwill related to the sale of our EMEA Asset Management business and a gain on the sale of our Private Banking business in Hong Kong and Singapore in the second quarter of 2021. All periods included the amortization of acquisition-related intangible assets and acquisition and integration costs.

Revenue has generally been increasing, reflecting the benefit of our diversified businesses. Revenue growth in our P&C businesses has strengthened in recent quarters, supported by customer acquisition and higher loan volumes, with higher net interest margins reflecting the rapidly rising interest rate environment. Revenue in BMO Wealth Management is impacted by fluctuations in global markets, with underlying performance driven by strong growth in loans and deposits and net new client assets, as well as higher net interest margins in recent quarters. Insurance revenue, net of CCPB, is subject to variability resulting from changes in interest rates and equity markets. BMO Capital Markets revenue is impacted by market conditions that drive client activity, which supported strong performance in the previous five quarters in both Global Markets and Investment and Corporate Banking, while the most recent three quarters reflected more challenging market conditions that led to lower underwriting and advisory revenue.

As the economy recovered from the economic downturn brought on by the pandemic, we recorded lower provisions for credit losses on impaired loans, as well as recoveries of provisions for credit losses on performing loans, as a result of an improving economic outlook and portfolio credit improvement. However, the most recent quarters reflected the impact of a deteriorating economic outlook, a lower benefit from improvement in credit quality, and stronger balance growth.

Non-interest expense growth was driven by investments to drive revenue growth and efficiency improvement, including sales force expansion, higher advertising spend and technology, as well as higher salaries reflecting the inflationary environment.

The effective tax rate has varied with legislative changes; changes in tax policy, including their interpretation by tax authorities and the courts; earnings mix, including the relative proportion of earnings attributable to the different jurisdictions in which we operate; the level of pre-tax income; and the level of tax-exempt income from securities. The reported effective tax rate in the past seven quarters was impacted by the sale of our EMEA Asset Management business, as well as fair value management actions related to the announced acquisition of Bank of the West.

For further information on non-GAAP amounts, measures and ratios in this Summary Quarterly Earnings Trends section, refer to the Non-GAAP and Other Financial Measures section.

# Review of Fourth Quarter 2022 Performance

## Q4 2022 vs. Q4 2021

### Net Income

Reported net income was $4,483 million, an increase of $2,324 million from the prior year, and adjusted net income was $2,136 million, a decrease of $90 million or 4% from the prior year. Adjusted results in the current quarter excluded the impact of the announced acquisition of Bank of the West, including revenue of $3,336 million ($4,541 million pre-tax) related to the management of the impact of interest rate changes between the announcement and the closing of the acquisition on its fair value and goodwill, and related acquisition and integration costs. In addition, reported results excluded the impact of a legal provision of $846 million ($1,142 million pre-tax), including legal fees of $22 million. Adjusted results in both periods excluded the impact of divestitures, the amortization of acquisition-related intangible assets, and acquisition and integration costs. Reported EPS was $6.51, an increase of $3.28 from the prior year, and adjusted EPS was $3.04, a decrease of $0.29 from the prior year. The public share offering completed on March 29, 2022 reduced reported EPS by $0.18 and adjusted EPS by $0.07.

The increase in reported results reflected higher revenue from fair value management actions, partially offset by the legal provision noted above. Adjusted results decreased, as higher net revenue was more than offset by a higher provision for credit losses compared with a recovery in the prior year, and higher expenses.

### Revenue

Reported revenue was $10,570 million, compared with $6,573 million in the prior year. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), revenue was $10,939 million, an increase of $4,463 million from the prior year, and adjusted revenue, net of CCPB was $6,913 million, an increase of $437 million or 7%. Adjusted net revenue in the current quarter excluded revenue of $4,541 million resulting from fair value management actions related to the announced acquisition of Bank of the West, as well as interest expense of $515 million related to the legal provision. The impact of the stronger U.S. dollar increased revenue growth by 4% and 3% on a reported and adjusted basis, respectively.

Revenue increased in our P&C businesses, primarily due to higher net interest income reflecting strong loan growth and higher net interest margins, partially offset by lower non-interest revenue. Revenue decreased in BMO Wealth Management, as higher net interest income and growth in net new client assets were more than offset by divestitures and weaker global markets. Revenue decreased in BMO Capital Markets, as higher Global Markets revenue was more than offset by lower Investment and Corporate Banking revenue. On a reported basis, revenue in Corporate Services increased from the prior year, due to the adjusting items noted above, and decreased on an adjusted basis.

## Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were negative $369 million, compared with $97 million in the prior year. Results decreased largely due to changes in the fair value of policy benefit liabilities. CCPB decreased $782 million from the prior quarter, due to changes in the fair value of policy benefit liabilities and the impact of lower annuity sales. These changes were largely offset in insurance revenue.

## Provision for Credit Losses

Total provision for credit losses was $226 million, compared with a recovery of the provision for credit losses of $126 million in the prior year. The total provision for credit losses as a percentage of average net loans and acceptances ratio was 16 basis points, compared with a recovery of 11 basis points in the prior year. The provision for credit losses on impaired loans was $192 million, an increase of $108 million from the prior year. The provision for credit losses on impaired loans as a percentage of average net loans and acceptances ratio was 14 basis points, compared with 7 basis points in the prior year. There was a $34 million provision for credit losses on performing loans in the current quarter, compared with a $210 million recovery in the prior year. The $34 million provision for credit losses on performing loans in the current quarter reflected a deteriorating economic outlook and balance growth, largely offset by continued reduction in uncertainty as a result of the improving pandemic environment and portfolio credit improvement. The $210 million recovery of credit losses in the prior year largely reflected an improving economic outlook and portfolio credit improvement, partially offset by growth in loan balances.

## Non-Interest Expense

Reported non-interest expense was $4,776 million, an increase of $973 million from the prior year, and adjusted non-interest expense was $3,954 million, an increase of $234 million or 6%. Adjusted non-interest expense excluded the impact of the legal provision in the current quarter and the impact of divestitures, amortization of acquisition-related intangible assets, and acquisition and integration costs in both periods. The increase in reported expenses reflected the impact of the legal provision, as well as higher acquisition and integration costs related to the announced acquisition of Bank of the West. Reported and adjusted expenses increased due to higher employee-related costs, including higher salaries, performance-based compensation and sales force expansion, and higher computer and equipment costs, partially offset by divestitures. The impact of the stronger U.S. dollar increased expenses by approximately 4% on a reported basis and 3% on an adjusted basis.

## Provision for Income Taxes

The provision for income taxes was $1,454 million, an increase of $814 million from the prior year, and the effective tax rate was 24.5%, compared with 22.9% in the prior year. The adjusted provision for income taxes was $597 million, a decrease of $59 million from the prior year, and the adjusted effective tax rate was 21.8%, compared with 22.7% in the prior year. The change in the reported effective tax rate was primarily due to the impact of higher pre-tax income in the current quarter. The change in the adjusted effective tax rate was primarily due to earnings mix, including the impact of lower pre-tax income in the current quarter.

## Q4 2022 vs. Q3 2022

Reported net income was $4,483 million, an increase of $3,118 million from the prior quarter, and adjusted net income was $2,136 million, relatively unchanged from the prior quarter. Reported EPS increased $4.56 from the prior quarter, and adjusted EPS decreased $0.05. The increase in reported results reflected higher revenue related to fair value management actions, partially offset by the legal provision and higher acquisition and integration costs noted above. Adjusted results were relatively unchanged, as higher net revenue was offset by higher expenses and a higher provision for credit losses. Net income increased in BMO Capital Markets and U.S. P&C, and decreased in Canadian P&C and BMO Wealth Management. On a reported basis, Corporate Services recorded net income compared with a net loss in the prior quarter, and on an adjusted basis, Corporate Services recorded a net loss compared with net income in the prior quarter.

Reported revenue was $10,570 million, an increase of $4,471 million from the prior quarter, and reported revenue, net of CCPB, was $10,939 million, and increase of $5,253 million from the prior quarter. Adjusted revenue, net of CCPB, increased $282 million or 4%. The impact of the stronger U.S. dollar increased revenue growth by 3% and 2% on a reported and adjusted basis, respectively. Reported non-interest expense increased $917 million or 24% from the prior quarter, and adjusted non-interest expense increased $193 million or 5%. The impact of the stronger U.S. dollar increased expenses by approximately 3% on a reported basis and 2% on an adjusted basis. Total provision for credit losses was $226 million, an increase of $90 million from the prior quarter.

For further information on non-GAAP amounts, measures and ratios in this Review of Fourth Quarter 2022 Performance section, refer to the Non-GAAP and Other Financial Measures section.

# 2021 Financial Performance Review

The preceding discussions in the MD&A focused on BMO's performance in fiscal 2022. This section summarizes BMO's performance in fiscal 2021, relative to fiscal 2020. Certain prior-year data has been reclassified to conform with the presentation in 2022, including changes resulting from transfers between operating groups. Further information on these reclassifications is provided in the How BMO Reports Operating Group Results section.

| (Canadian $ in millions) | Canadian P&C | U.S. P&C | Total P&C | BMO Wealth Management | BMO Capital Markets | Corporate Services | Total Bank |
|---|---|---|---|---|---|---|---|
| **2021** | | | | | | | |
| Net interest income (loss) | 6,561 | 4,268 | 10,829 | 982 | 3,115 | (616) | 14,310 |
| Non-interest revenue | 2,225 | 1,243 | 3,468 | 6,071 | 3,011 | 326 | 12,876 |
| Revenue | 8,786 | 5,511 | 14,297 | 7,053 | 6,126 | (290) | 27,186 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | – | – | – | 1,399 | – | – | 1,399 |
| Revenue, net of CCPB | 8,786 | 5,511 | 14,297 | 5,654 | 6,126 | (290) | 25,787 |
| Provision for (recovery of) credit losses | 377 | (144) | 233 | (12) | (194) | (7) | 20 |
| Non-interest expense | 3,968 | 2,813 | 6,781 | 3,843 | 3,462 | 1,423 | 15,509 |
| Income (loss) before income taxes (teb) (1) | 4,441 | 2,842 | 7,283 | 1,823 | 2,858 | (1,706) | 10,258 |
| Provision for (recovery of) income taxes | 1,153 | 666 | 1,819 | 441 | 738 | (494) | 2,504 |
| Net income (loss) | 3,288 | 2,176 | 5,464 | 1,382 | 2,120 | (1,212) | 7,754 |
| Acquisition and integration costs | – | – | – | – | 7 | – | 7 |
| Amortization of acquisition-related intangible assets | 1 | 24 | 25 | 24 | 17 | – | 66 |
| Impact of divestitures | – | – | – | – | – | 842 | 842 |
| Restructuring costs (reversals) | – | – | – | – | – | (18) | (18) |
| Adjusted net income (loss) | 3,289 | 2,200 | 5,489 | 1,406 | 2,144 | (388) | 8,651 |
| **2020** | | | | | | | |
| Net interest income (loss) | 6,104 | 4,346 | 10,450 | 901 | 3,320 | (700) | 13,971 |
| Non-interest revenue | 1,930 | 1,186 | 3,116 | 5,808 | 2,006 | 285 | 11,215 |
| Revenue | 8,034 | 5,532 | 13,566 | 6,709 | 5,326 | (415) | 25,186 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | – | – | – | 1,708 | – | – | 1,708 |
| Revenue, net of CCPB | 8,034 | 5,532 | 13,566 | 5,001 | 5,326 | (415) | 23,478 |
| Provision for (recovery of) credit losses | 1,411 | 859 | 2,270 | 22 | 659 | 2 | 2,953 |
| Non-interest expense | 3,901 | 3,029 | 6,930 | 3,648 | 3,227 | 372 | 14,177 |
| Income (loss) before income taxes (teb) (1) | 2,722 | 1,644 | 4,366 | 1,331 | 1,440 | (789) | 6,348 |
| Provision for (recovery of) income taxes | 702 | 332 | 1,034 | 329 | 348 | (460) | 1,251 |
| Net income (loss) | 2,020 | 1,312 | 3,332 | 1,002 | 1,092 | (329) | 5,097 |
| Acquisition and integration costs | – | – | – | – | 11 | – | 11 |
| Amortization of acquisition-related intangible assets | 2 | 39 | 41 | 34 | 18 | – | 93 |
| Adjusted net income (loss) | 2,022 | 1,351 | 3,373 | 1,036 | 1,121 | (329) | 5,201 |

(1) BMO analyzes revenue on a teb basis at the operating group level, with the offset to the group teb adjustments recorded in Corporate Services non-interest revenue and provision for income taxes. Revenue measures, net of CCPB, adjusted results and ratios, and teb amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

## Net Income

Reported net income in 2021 was $7,754 million, an increase of $2,657 million or 52% from 2020. Adjusted net income was $8,651 million, an increase of $3,450 million or 66%. Adjusted results in 2021 excluded a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions, partially offset by the partial reversal of $18 million ($24 million pre-tax) of restructuring charges related to severance in 2019. In addition, adjusted net income in both years excluded the amortization of acquisition-related intangible assets and acquisition-related integration costs. The amortization of acquisition-related intangible assets was $88 million and $121 million in 2021 and 2020, respectively. Acquisition and integration costs were $9 million and $14 million in 2021 and 2020, respectively. The increase in net income reflected a recovery from the significant adverse impact of the COVID-19 pandemic on the global economy, our customers and our 2020 financial results, including the impact of lower provisions for credit losses and net revenue growth of 10%, partially offset by an increase in expenses and the impact of the weaker U.S. dollar. Net income increased in all operating groups, partially offset by a higher net loss in Corporate Services.

## Return on Equity

Reported return on equity (ROE) was 14.9% in 2021 and adjusted ROE was 16.7%, compared with 10.1% and 10.3%, respectively, in 2020. Reported and adjusted ROE increased, due to higher net income, partially offset by higher common equity. Average common shareholders' equity increased $2.2 billion or 5% from 2020, primarily due to growth in retained earnings, partially offset by a decrease in accumulated other comprehensive income. The reported return on tangible common equity (ROTCE) was 17.0%, compared with 11.9% in 2020, and adjusted ROTCE was 18.9%, compared with 11.9%. Book value per share increased 4% from 2020 to $80.18, reflecting the increase in shareholders' equity.

## Revenue

Reported revenue in 2021 was $27,186 million, an increase of $2,000 million from 2020, and adjusted revenue was $27,157 million, an increase of $1,971 million, both increasing 8% from 2020. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), reported net revenue in 2021 was $25,787 million, an increase of $2,309 million, and adjusted net revenue was $25,758 million, an increase of $2,280 million, both increasing 10% from 2020. Adjusted revenue and adjusted net revenue in 2021 excluded the $29 million ($22 million after-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore. The impact of the weaker U.S. dollar reduced revenue growth by 2%.

**Canadian P&C**

Total revenue in 2021 increased $752 million or 9% from 2020. Net interest income increased $457 million or 7%, due to higher balances and higher loan margins, partially offset by lower deposit margins. Non-interest revenue increased $295 million or 15%, with higher revenue across most categories, including higher gains on investments in our commercial business and higher card-related revenue. Personal and Business Banking revenue increased $437 million or 8%, and Commercial Banking revenue increased $315 million or 14%.

**U.S. P&C**

Total revenue in 2021 decreased $21 million from 2020 on a Canadian dollar basis. On a U.S. dollar basis, revenue increased $277 million or 7%. Net interest income increased $169 million or 5%, due to higher loan margins, growth in deposits and accelerated Paycheck Protection Program (PPP) (1) revenue resulting from loan forgiveness, partially offset by lower deposit product margins. Non-interest revenue increased $108 million or 12%, with higher revenue across most categories, primarily reflecting higher commercial lending-related fee revenue, advisory fee revenue and deposit fee revenue. Personal and Business Banking revenue increased $20 million or 2%, and Commercial Banking revenue increased $257 million or 9%.

**BMO Wealth Management**

Revenue in 2021 increased $344 million or 5% from 2020. Revenue, net of CCPB, in 2021 increased $653 million or 13%. Revenue in Wealth and Asset Management increased $584 million or 13%, reflecting growth in client assets, including the impact of stronger global markets, strong loan and deposit growth partially offset by lower margins, higher online brokerage revenue and a legal provision in 2020, partially offset by the impact of the weaker U.S. dollar. Insurance revenue in 2021 decreased $240 million or 11% from 2020. Insurance revenue, net of CCPB, increased $69 million or 17% in 2021, primarily due to the impact of more favourable market movements in 2021 and business growth, partially offset by lower benefits from changes in investments to improve asset liability management and the unfavourable impact of actuarial assumption changes in 2021.

**BMO Capital Markets**

Revenue increased $800 million or 15% from 2020. Global Markets revenue increased $383 million or 12%, primarily due to higher equities trading revenue, as well as higher levels of new equity and debt issuances, partially offset by lower interest rate and commodities trading revenue and the impact of the weaker U.S. dollar. Revenue in 2020 included negative impacts from equity linked notes-related businesses. Investment and Corporate Banking revenue increased $417 million or 20%, primarily due to higher net securities gains and underwriting and advisory revenue, partially offset by lower corporate banking-related revenue and the impact of the weaker U.S. dollar. Revenue in 2020 was impacted by mark-downs on the held-for-sale loan portfolio.

**Corporate Services**

Reported and adjusted revenue in 2021 increased $125 million and $96 million, respectively, from 2020, primarily due to higher securities gains and treasury-related activities.

## Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were $1,399 million in 2021, compared with $1,708 million in 2020. CCPB decreased, primarily due to changes in the fair value of policy benefit liabilities, partially offset by the impact of higher annuity sales. The changes were largely offset in revenue.

## Provision for Credit Losses

The total provision for credit losses (PCL) in 2021 was $20 million, compared with $2,953 million in 2020, primarily due to an improving economic outlook and more favourable credit conditions. PCL on impaired loans was $525 million, a decrease of $997 million from 2020, largely due to lower provisions in our P&C businesses and BMO Capital Markets. There was a $505 million recovery of the provision for credit losses on performing loans in 2021, compared with a $1,431 million provision in 2020. The recovery in 2021 largely reflected an improving economic outlook and positive credit migration, partially offset by growth in loan balances.

## Non-Interest Expense

Reported non-interest expense in 2021 was $15,509 million, an increase of $1,332 million or 9% from 2020, primarily due to the impact of divestitures, including a $779 million write-down of goodwill related to the sale of our EMEA Asset Management business and $107 million of divestiture-related costs in 2021. Adjusted non-interest expense in 2021 was $14,550 million, an increase of $508 million or 4% from 2020. Adjusted non-interest expense excluded the impact of divestitures and a restructuring cost reversal in 2021, as well as the amortization of acquisition-related intangible assets and acquisition and integration costs in both years. Reported and adjusted non-interest expense increased, due to higher performance-based compensation, computer and equipment costs and professional fees, partially offset by the benefits of a continued disciplined approach to expense management and the impact of the weaker U.S. dollar, which reduced expense growth by 3% on a reported basis and 2% on an adjusted basis.

## Provision for Income Taxes

The provision for income taxes in 2021 was $2,504 million, compared with $1,251 million in 2020. The effective tax rate was 24.4%, compared with 19.7%. The adjusted provision for income taxes was $2,537 million, compared with $1,282 million in 2020. The adjusted effective tax rate was 22.7% in 2021, compared with 19.8%. The effective tax rate and adjusted effective tax rate were lower in the prior year, primarily due to earnings mix, including the impact of lower pre-tax income in 2020. The effective tax rate in 2021 was higher than the adjusted effective tax rate, due to the write-down of goodwill related to the sale of our EMEA Asset Management business in 2021.

For further information on non-GAAP amounts, measures and ratios in this 2021 Financial Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

(1) The U.S. Small Business Administration Paycheck Protection Program (PPP) is a government relief program implemented in fiscal 2020 to support businesses that faced financial hardship caused by the COVID-19 pandemic.

# Financial Condition Review

## Summary Balance Sheet

| (Canadian $ in millions)<br>As at October 31 | 2022 | 2021 |
|---|---|---|
| **Assets** | | |
| Cash and interest bearing deposits with banks | **93,200** | 101,564 |
| Securities | **273,262** | 232,849 |
| Securities borrowed or purchased under resale agreements | **113,194** | 107,382 |
| Net loans | **551,339** | 458,262 |
| Derivative instruments | **48,160** | 36,713 |
| Other assets | **60,044** | 51,405 |
| Total assets | **1,139,199** | 988,175 |
| **Liabilities and Equity** | | |
| Deposits | **769,478** | 685,631 |
| Derivative instruments | **59,956** | 30,815 |
| Securities lent or sold under repurchase agreements | **103,963** | 97,556 |
| Other liabilities | **126,614** | 109,757 |
| Subordinated debt | **8,150** | 6,893 |
| Equity | **71,038** | 57,523 |
| Total liabilities and equity | **1,139,199** | 988,175 |

MD&A

### Overview

Total assets of $1,139.2 billion increased $151.0 billion from October 31, 2021. The stronger U.S. dollar increased assets by $44.7 billion, excluding the impact on derivative assets. Total liabilities of $1,068.2 billion increased $137.5 billion from the prior year. The stronger U.S. dollar increased liabilities by $43.4 billion, excluding the impact of derivative liabilities. Total equity of $71.0 billion increased $13.5 billion from October 31, 2021, including the equity issuance related to the announced acquisition of Bank of the West.

### Cash and Interest Bearing Deposits with Banks

Cash and interest bearing deposits with banks decreased $8.4 billion, primarily due to lower balances held with central banks, partially offset by the impact of the stronger U.S. dollar. The reduction of central bank cash balances reflects the use of the proceeds to purchase U.S. treasury securities as part of our fair value management actions related to the announced acquisition of Bank of the West and was partially offset by higher cash balances in Global Markets. Refer to the Significant Events section for further information on our fair value management actions.

### Securities

| (Canadian $ in millions)<br>As at October 31 | 2022 | 2021 |
|---|---|---|
| Trading | **108,177** | 104,411 |
| Fair value through profit or loss (FVTPL) (1) | **13,641** | 14,210 |
| Fair value through other comprehensive income – Debt and equity (2) | **43,561** | 63,123 |
| Amortized cost (3) | **106,590** | 49,970 |
| Investments in associates and joint ventures | **1,293** | 1,135 |
| Total securities | **273,262** | 232,849 |

(1) Included securities mandatorily measured at FVTPL of $4,410 million ($3,038 million as at October 31, 2021) and designated securities at fair value of $9,231 million ($11,172 million as at October 31, 2021).
(2) Included allowances for credit losses on debt securities recorded at fair value through other comprehensive income of $3 million as at October 31, 2022 ($2 million as at October 31, 2021).
(3) Net of allowances for credit losses of $3 million ($2 million as at October 31, 2021).

Securities increased $40.4 billion, primarily due to the fair value management actions noted above and the impact of the stronger U.S. dollar, partially offset by lower levels of client activity in BMO Capital Markets.

### Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements increased $5.8 billion, due to the impact of the stronger U.S. dollar and higher levels of client activity in BMO Capital Markets, partially offset by treasury activities in Corporate Services.

### Net Loans

| (Canadian $ in millions)<br>As at October 31 | 2022 | 2021 |
|---|---|---|
| Residential mortgages | **148,880** | 135,750 |
| Non-residential mortgages | **18,625** | 17,195 |
| Consumer instalment and other personal | **86,103** | 77,164 |
| Credit cards | **9,663** | 8,103 |
| Businesses and governments | **290,685** | 222,614 |
| Gross loans | **553,956** | 460,826 |
| Allowance for credit losses | **(2,617)** | (2,564) |
| Total net loans | **551,339** | 458,262 |

Net loans increased $93.1 billion from October 31, 2021. Residential mortgages increased $13.1 billion, primarily due to growth in Canadian P&C. Non-residential mortgages increased $1.4 billion due to growth in U.S. P&C, including the impact of the stronger U.S. dollar, partially offset by lower balances in BMO Capital Markets and Canadian P&C. Consumer instalment and other personal loans increased $8.9 billion, primarily due to growth in Canadian P&C and BMO Wealth Management and the impact of the stronger U.S. dollar. Business and government loans increased $68.1 billion, reflecting growth across all operating groups and the impact of the stronger U.S. dollar. Credit cards increased $1.6 billion, primarily reflecting higher balances in Canadian P&C.

Table 4 in the Supplemental Information provides a comparative summary of loans by geographic location and product. Table 6 in the Supplemental Information provides a comparative summary of net loans in Canada by province and industry. Loan quality is discussed in the Credit Quality Information section, and further details on loans are provided in Notes 4, 6 and 24 of the consolidated financial statements.

## Derivative Financial Assets

Derivative financial assets increased $11.4 billion, reflecting an increase in the value of client-driven trading derivatives in BMO Capital Markets, with increases in the fair value of foreign exchange, interest rate and equity contracts, partially offset by a decrease in the value of commodities contracts. Further details on derivative financial assets are provided in Note 8 of the consolidated financial statements.

## Other Assets

Other assets primarily include customers' liability under acceptances, goodwill and intangible assets, cash collateral, insurance-related assets, premises and equipment, precious metals, current and deferred tax assets, accounts receivable and prepaid expenses. Other assets increased $8.6 billion, primarily due to higher cash collateral balances posted with counterparties and the impact of the stronger U.S. dollar, partially offset by lower customers' liability under acceptances and the write-down of goodwill related to the sale of our EMEA Asset Management business. Further details on other assets are provided in Notes 11 and 12 of the consolidated financial statements.

## Deposits

| (Canadian $ in millions)<br>As at October 31 | **2022** | 2021 |
|---|---|---|
| Banks | **30,901** | 26,611 |
| Businesses and governments | **495,831** | 442,248 |
| Individuals | **242,746** | 216,772 |
| Total deposits | **769,478** | 685,631 |

Deposits increased $83.8 billion. Business and government deposits increased $53.6 billion, reflecting the impact of the stronger U.S. dollar, higher wholesale funding balances to fund customer loan growth and Global Markets client activity, and growth in customer deposits in Canadian P&C and BMO Wealth Management, partially offset by lower source currency commercial deposits in U.S. P&C. Deposits by individuals increased $26.0 billion, primarily due to growth in customer deposits in Canadian P&C, higher broker term deposits reported in Corporate Services and the impact of the stronger U.S. dollar. Deposits by banks increased $4.3 billion, reflecting higher wholesale funding for Global Markets client activity and the impact of the stronger U.S. dollar. Further details on the composition of deposits are provided in Note 13 of the consolidated financial statements and in the Liquidity and Funding Risk section.

## Derivative Financial Liabilities

Derivative financial liabilities increased $29.1 billion, primarily due to an increase in the value of client-driven trading derivatives in BMO Capital Markets, with increases in the fair value of foreign exchange, interest rate, equity and commodities contracts.

## Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements increased $6.4 billion due to the impact of the stronger U.S. dollar and higher levels of client activity in BMO Capital Markets.

## Other Liabilities

Other liabilities primarily include securities sold but not yet purchased, securitization and structured entities liabilities, acceptances, insurance-related liabilities and accounts payable. Other liabilities increased $16.9 billion, primarily reflecting an increase in securities sold but not yet purchased due to higher levels of client activity in BMO Capital Markets, higher Federal Home Loan Bank borrowings, the impact of the stronger U.S. dollar and higher accrued interest payable, partially offset by lower cash collateral received on over-the-counter derivatives, as well as insurance-related liabilities and acceptances.

Further details on the composition of other liabilities are provided in Note 14 of the consolidated financial statements.

## Subordinated Debt

Subordinated debt increased $1.3 billion from the prior year, reflecting new issuances net of a redemption and the impact of the stronger U.S. dollar. Further details on the composition of subordinated debt are provided in Note 15 of the consolidated financial statements.

## Equity

| (Canadian $ in millions)<br>As at October 31 | **2022** | 2021 |
|---|---|---|
| Share capital | | |
| Preferred shares and other equity instruments | **6,308** | 5,558 |
| Common shares | **17,744** | 13,599 |
| Contributed surplus | **317** | 313 |
| Retained earnings | **45,117** | 35,497 |
| Accumulated other comprehensive income | **1,552** | 2,556 |
| Total equity | **71,038** | 57,523 |

Total equity increased $13.5 billion from October 31, 2021, primarily due to higher retained earnings and a common share issuance, partially offset by a decrease in accumulated other comprehensive income. Retained earnings increased $9.6 billion, as a result of net income earned in the year, partially offset by dividends and distributions on other equity instruments. Common shares increased $4.1 billion, as a result of the equity issuance related to the announced acquisition of Bank of the West and shares issued under the dividend reinvestment plan. Preferred shares and other equity instruments increased $0.8 billion, reflecting new issuances net of redemptions in the year. Accumulated other comprehensive income decreased $1.0 billion, primarily due to the impact of higher interest rates on cash flow hedges, partially offset by the impact of the stronger U.S. dollar on the translation of net foreign operations and gains on remeasurement of own credit risk on financial liabilities designated at fair value.

The Consolidated Statement of Changes in Equity in the consolidated financial statements provides a summary of items that increase or reduce total equity, while Note 16 of the consolidated financial statements provides details on the components of, and changes in, share capital. Details on our enterprise-wide capital management practices and strategies can be found below.



# Enterprise-Wide Capital Management

## Capital Management

### Objective

BMO is committed to a disciplined approach to capital management that balances the interests and requirements of our shareholders, regulators, depositors, fixed income investors and rating agencies. Our objective is to maintain a strong capital position in a cost-effective structure that:

- Is appropriate given BMO's target regulatory capital ratios and internal assessment of required economic capital
- Underpins BMO's operating groups' business strategies
- Supports depositor, investor and regulator confidence, while building long-term shareholder value
- Is consistent with BMO's target credit ratings.

### Framework


The principles and key elements of our capital management framework are outlined in our Capital Management Corporate Policy and in the annual capital plan, which includes the results of the comprehensive Internal Capital Adequacy Assessment Process (ICAAP).

ICAAP is an integrated process that involves the application of stress testing and other tools to assess capital adequacy on both a regulatory and an economic capital basis. The results of this process are used in the establishment of capital targets and the implementation of capital strategies that take into consideration the strategic direction and risk appetite of the enterprise. The annual capital plan is developed considering the results of ICAAP and in conjunction with the annual business plan, promoting alignment between business and risk strategies, regulatory and economic capital requirements and the availability of capital. Enterprise-wide stress testing and scenario analysis are conducted in order to assess the impact of various stress conditions on our risk profile and capital requirements. Our capital management framework seeks to ensure that the bank is adequately capitalized given the risks we assume in the normal course of business, as well as under stress, and supports the determination of limits, targets and performance measures that are used to manage balance sheet positions, risk levels and capital requirements at both the consolidated entity and operating group levels. We evaluate assessments of actual and forecast capital adequacy against our capital plan throughout the year, and we update the plan to reflect changes in our business activities and risk profile, as well as the operating environment or regulatory requirements or expectations.

We allocate capital to operating groups in order to evaluate business performance, and we consider capital implications in our strategic, tactical and transactional decision-making. By allocating capital to operating groups, setting and monitoring capital limits and metrics, and measuring the groups' performance against these limits and metrics, we seek to optimize risk-adjusted return to our shareholders, while maintaining a well-capitalized position. This approach is intended to protect our stakeholders from the risks inherent in our various businesses, while still providing the flexibility to deploy resources in support of the strategic growth activities of the operating groups.

Refer to the Enterprise-Wide Risk Management section for further discussion of the risks underlying our business activities.

### Governance

The Board of Directors, either directly or in conjunction with its Risk Review Committee, provides ultimate oversight and approval of capital management, including the bank's Capital Management Corporate Policy framework, capital plan and capital adequacy assessments. The Board of Directors regularly reviews the bank's capital position and key capital management activities, and the Risk Review Committee reviews the capital adequacy assessment results determined by ICAAP. The Capital Management Committee provides senior management oversight, including the review of significant capital management policies, issues and activities and, along with the Risk Management Committee, the capital required to support the execution of our enterprise-wide strategy. Finance and Risk Management are responsible for the design and implementation of our corporate policies and frameworks related to capital and risk management, as well as ICAAP. The Corporate Audit Division, as the third line of defence, verifies adherence to controls and identifies opportunities to strengthen our processes. Refer to the Enterprise-Wide Risk Management Framework section for further discussion.

## Regulatory Capital Requirements

Regulatory capital requirements for BMO are determined in accordance with guidelines issued by the Office of the Superintendent of Financial Institutions (OSFI), which are based on the Basel III framework developed by the Basel Committee on Banking Supervision (BCBS). The minimum risk-based capital ratios set out in OSFI's Capital Adequacy Requirements (CAR) Guideline are a Common Equity Tier 1 (CET1) Ratio of 4.5%, a Tier 1 Capital Ratio of 6% and a Total Capital Ratio of 8%. In addition to the minimum capital requirements, OSFI also requires domestic systemically important banks (D-SIBs), including BMO, to hold Pillar 1 and Pillar 2 buffers, which are meant to be used as a normal first response in periods of stress. Pillar 1 buffers include a Capital Conservation Buffer of 2.5%, a D-SIB Common Equity Tier 1 surcharge of 1.0%, and a Countercyclical Buffer (which can range from 0% to 2.5%, depending on a bank's exposure to jurisdictions that have activated the buffer). Pillar 2 buffers include the Domestic Stability Buffer (DSB), which can range from 0% to 2.5% of RWA and was set at 2.5% as of October 31, 2022. The minimum Leverage Ratio set out in OSFI's Leverage Requirements (LR) Guideline is 3.0%. OSFI's capital requirements are summarized in the following table.

| (% of risk-weighted assets or leverage exposures) | Minimum capital requirements | Pillar 1 Capital Buffers (1) | Domestic Stability Buffer (2) | Minimum OSFI capital requirements including capital buffers | BMO Capital and Leverage Ratios as at October 31, 2022 |
|---|---|---|---|---|---|
| Common Equity Tier 1 Ratio | 4.5% | 3.5% | 2.5% | 10.5% | 16.7% |
| Tier 1 Capital Ratio | 6.0% | 3.5% | 2.5% | 12.0% | 18.4% |
| Total Capital Ratio | 8.0% | 3.5% | 2.5% | 14.0% | 20.7% |
| TLAC Ratio | 21.5% | na | 2.5% | 24.0% | 33.1% |
| Leverage Ratio | 3.0% | na | na | 3.0% | 5.6% |
| TLAC Leverage Ratio | 6.75% | na | na | 6.75% | 10.1% |

(1) The minimum 4.5% CET1 Ratio requirement is augmented by a total of 3.5% in Pillar 1 Capital Buffers, which can absorb losses during periods of stress. Pillar 1 Capital Buffers include a Capital Conservation Buffer of 2.5%, a Common Equity Tier 1 surcharge for D-SIBs of 1.0% and a Countercyclical Buffer, as prescribed by OSFI (immaterial for the fourth quarter of 2022). If a bank's capital ratios fall within the range of this combined buffer, restrictions on discretionary distributions of earnings (such as dividends, share repurchases and discretionary compensation) would ensue, with the degree of such restrictions varying according to the position of the bank's ratios within the buffer range.

(2) OSFI requires all D-SIBs to maintain a DSB against Pillar 2 risks associated with systemic vulnerabilities. The DSB can range from 0% to 2.5% of total RWA and was set at 2.5% as at October 31, 2022. Breaches of the DSB will not result in a bank being subject to automatic constraints on capital distributions.

na – not applicable

### Regulatory Capital and Total Loss Absorbing Capacity Ratios

The **Common Equity Tier 1 (CET1) Ratio** is calculated as CET1 Capital, which comprises common shareholders' equity, net of deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items, which may include a portion of expected credit loss provisions, divided by risk-weighted assets. The CET1 Ratio is calculated in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.

The **Tier 1 Capital Ratio** reflects Tier 1 Capital divided by risk-weighted assets.

The **Total Capital Ratio** reflects Total Capital divided by risk-weighted assets.

The **Leverage Ratio** reflects Tier 1 Capital divided by leverage exposures (LE), which consist of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

The **Total Loss Absorbing Capacity (TLAC) Ratio** reflects TLAC divided by risk-weighted assets.

The **TLAC Leverage Ratio** reflects TLAC divided by leverage exposures.

Refer to the Glossary of Financial Terms for definitions of ratios and their components.

### Regulatory Capital and Total Loss Absorbing Capacity Elements

BMO maintains a capital structure that is diversified across instruments and tiers to provide an appropriate mix of loss absorbency. The major components of regulatory capital and total loss absorbing capacity are summarized as follows:

**CET1 Capital**

- Common Shareholders' Equity
- May include portion of expected credit loss provisions
- Less regulatory deductions for items such as:
  - Goodwill
  - Intangible assets
  - Defined benefit pension assets
  - Certain deferred tax assets
  - Certain other items

**Additional Tier 1 (AT1) Capital**

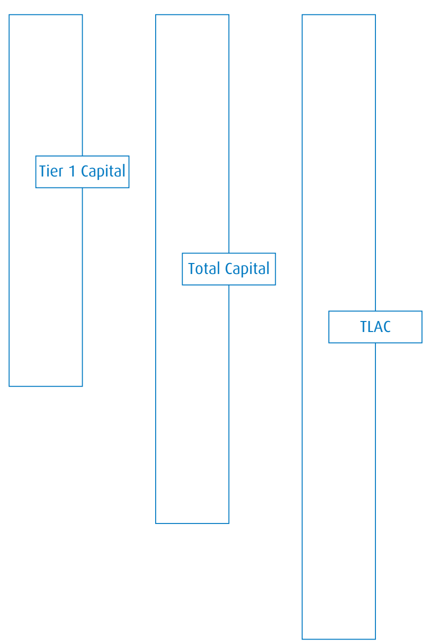
- Preferred shares
- Other AT1 capital instruments
- Less regulatory deductions

**Tier 2 Capital**

- Subordinated debentures
- May include portion of expected credit loss provisions
- Less regulatory deductions

**Other Total Loss Absorbing Capacity (TLAC)**

- Other TLAC instruments (including eligible Bail-in debt)
- Less regulatory deductions



OSFI's CAR Guideline implemented the non-viability contingent capital (NVCC) provisions set out by the BCBS, which require the conversion of certain capital instruments into a variable number of common shares if OSFI announces that a bank is, or is about to become, non-viable, or if the federal or a provincial government in Canada publicly announces that the bank has accepted, or has agreed to accept, a capital injection or equivalent support to avoid non-viability.

Under OSFI's CAR Guideline, non-common share capital instruments that do not meet Basel III requirements, including NVCC requirements, were fully phased out effective the first quarter of fiscal 2022. The impact on the bank was nominal.

Under Canada's Bank Recapitalization (Bail-In) Regime, eligible senior debt issued on or after September 23, 2018 is subject to statutory conversion requirements. Canada Deposit Insurance Corporation has the power to trigger the conversion of bail-in debt into common shares. This statutory conversion supplements NVCC securities, which must be converted in full prior to the conversion of bail-in debt. The minimum TLAC requirements set by OSFI are a risk-based TLAC Ratio of 24.0% of RWA, including the DSB currently set at 2.5%, and a TLAC Leverage Ratio of 6.75%, effective November 1, 2021. As at October 31, 2022, our TLAC Ratio was 33.1% and our TLAC Leverage Ratio was 10.1%, calculated in accordance with OSFI's TLAC Guideline.

### Risk-Weighted Assets

Risk-weighted assets (RWA) measure a bank's exposures, weighted for their relative risk and calculated in accordance with the regulatory capital rules prescribed by OSFI. RWA are calculated for credit, market and operational risks based on OSFI's prescribed rules.

We primarily use the Advanced Internal Ratings Based (AIRB) Approach to determine credit RWA in our portfolio. The AIRB Approach applies sophisticated techniques to measure RWA at the exposure level based on sound risk management principles, including estimates of the probability of default, loss given default and exposure at default risk parameters, term to maturity and asset class type, as prescribed by the OSFI rules. These risk parameters are determined using historical portfolio data supplemented by benchmarking, as appropriate, and are updated periodically. Validation procedures related to these parameters are in place in order to quantify and differentiate risks appropriately. Credit RWA related to certain Canadian and U.S. portfolios are determined under the Basel III Standardized Approach, using prescribed risk weights based on external ratings, counterparty type or product type.

Our market risk RWA are primarily determined using the more advanced Internal Models Approach, but the Standardized Approach is used for some exposures.

Beginning in fiscal 2020, OSFI has required that BMO, along with the other banks that have been approved to use the Advanced Measurement Approach, change to the Basel II Standardized Approach for determining enterprise operational risk regulatory capital requirements in the interim period prior to implementation of the new Basel III Standardized Measurement Approach as part of the Basel III reforms.

BMO is subject to a capital floor as prescribed in OSFI's CAR Guideline. In calculating regulatory capital ratios, there is a requirement to increase total RWA when the capital floor amount calculated under the Standardized Approach is higher than a similar calculation using the more risk-sensitive advanced approach rules. The capital floor became operative for BMO at the beginning of the second quarter of fiscal 2022.

## Regulatory Capital Developments

On November 7, 2022, OSFI announced a new Assurance on Capital, Leverage and Liquidity Returns Guideline, applicable to the capital, leverage and liquidity returns of federally regulated deposit-taking institutions. The requirements for an internal audit opinion, senior management attestation and external audit opinion will phase in over a three-year period, beginning in fiscal 2023.

On September 13, 2022, OSFI announced that the temporary exclusion of central bank reserves from the Leverage Ratio exposure measure for deposit-taking institutions will end on April 1, 2023.

On August 18, 2022, OSFI issued *Interim arrangements for the regulatory capital and liquidity treatment of crypto asset exposures*, which is intended to ensure that federally regulated financial institutions apply a conservative treatment and set prudent limits in relation to their crypto asset exposures.

On June 22, 2022, OSFI announced that the DSB would remain at 2.50% of total RWA. OSFI has stated that it is reviewing the design and range of the DSB as part of its work to ensure the long-term effectiveness of the capital regime applicable to D-SIBs.

On January 31, 2022, OSFI announced revised capital, leverage, liquidity and disclosure requirements for the domestic implementation of the final Basel III banking reforms. Most of these revised requirements will take effect in the second quarter of 2023, with those related to market risk and credit valuation adjustment risk taking effect in 2024.

Effective November 4, 2021, OSFI announced that financial institutions may resume regular dividend increases and common share repurchases, which had been restricted since March 2020.

## Regulatory Capital Review

BMO is well capitalized, with capital ratios that exceed OSFI's published requirements for large Canadian banks, including a 2.5% DSB. Our CET1 Ratio was 16.7% as at October 31, 2022, compared with 13.7% as at October 31, 2021. The CET1 Ratio increased from the end of fiscal 2021, primarily driven by the benefit of fair value management actions related to the announced acquisition of Bank of the West, strong internal capital generation, the issuance of common shares through a public offering and under the shareholder dividend reinvestment and share repurchase plan (DRIP), and the benefit of the sale of our EMEA Asset Management business, partially offset by higher risk-weighted assets (RWA) and a legal provision related to a lawsuit associated with a predecessor bank, M&I Marshall and Ilsley Bank.

Our Tier 1 Capital and Total Capital Ratios were 18.4% and 20.7%, respectively, as at October 31, 2022, compared with 15.4% and 17.6%, respectively, as at October 31, 2021. The Tier 1 Capital Ratio was higher due to the factors impacting the CET1 Ratio and issuances of Additional Tier 1 (AT1) instruments, partially offset by redemptions. The Total Capital Ratio was higher due to the factors impacting the Tier 1 Capital Ratio, as well as issuances of Tier 2 capital instruments, partially offset by redemptions.

The impact of foreign exchange rate movements on capital ratios was largely offset. Our investments in foreign operations are primarily denominated in U.S. dollars, and the foreign exchange impact of U.S.-dollar-denominated RWA and capital deductions may result in variability in the bank's capital ratios. We may manage the impact of foreign exchange rate movements on our capital ratios, and did so during fiscal 2022. Any such activities could also impact BMO's book value and return on equity.

Our Leverage Ratio was 5.6% as at October 31, 2022, an increase from 5.1% as at October 31, 2021, due to higher Tier 1 Capital, which was partially offset by higher leverage exposures driven by business growth and the impact of foreign exchange rate movements.

While the ratios discussed above reflect our consolidated capital base, we conduct business through a variety of corporate structures, including subsidiaries. A framework is in place, such that capital and funding are managed appropriately at the subsidiary level.

As a U.S. bank intermediate holding company classified as a Category IV institution, our subsidiary BMO Financial Corp. (BFC) is subject to the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Test (DFAST) requirements of the Federal Reserve Board (FRB) on a biennial basis, beginning with CCAR 2020.

BFC was required to participate in the FRB's 2022 CCAR exercise. On June 23, 2022, the FRB released its 2022 CCAR and DFAST results, and on August 4, 2022, announced individual large bank capital requirements, which were effective October 1, 2022. For BFC, the FRB determined a CET1 Ratio requirement of 7.9%, including the 4.5% minimum CET1 Ratio and a 3.4% stress capital buffer (SCB). BFC is well capitalized, with a strong CET1 Ratio of 13.1% as at September 30, 2022.

## Regulatory Capital (1)

| (Canadian $ in millions, except as noted)<br>As at October 31 | **2022** | 2021 |
|---|---|---|
| **Common Equity Tier 1 Capital: instruments and reserves** | | |
| Directly issued qualifying common share capital plus related stock surplus | **18,061** | 13,912 |
| Retained earnings | **45,117** | 35,497 |
| Accumulated other comprehensive income (and other reserves) | **1,552** | 2,556 |
| Goodwill and other intangibles (net of related tax liability) | **(6,901)** | (7,130) |
| Other common equity Tier 1 capital deductions | **3,062** | (344) |
| **Common Equity Tier 1 Capital (CET1)** | **60,891** | 44,491 |
| **Additional Tier 1 Capital: instruments** | | |
| Directly issued qualifying Additional Tier 1 instruments plus related stock surplus | **6,308** | 5,558 |
| Directly issued capital instruments subject to phase-out from Additional Tier 1 Capital | **–** | – |
| Additional Tier 1 instruments (and CET1 instruments not otherwise included) issued by subsidiaries and held by third parties (amount allowed in group AT1) | **–** | – |
| *of which: instruments issued by subsidiaries subject to phase-out* | **–** | – |
| **Total regulatory adjustments applied to Additional Tier 1 Capital** | **(78)** | (83) |
| **Additional Tier 1 capital (AT1)** | **6,230** | 5,475 |
| **Tier 1 Capital (T1 = CET1 + AT1)** | **67,121** | 49,966 |
| **Tier 2 Capital: instruments and provisions** | | |
| Directly issued qualifying Tier 2 instruments plus related stock surplus | **8,003** | 6,747 |
| Directly issued capital instruments subject to phase-out from Tier 2 Capital | **–** | 141 |
| Tier 2 instruments (and CET1 and AT1 instruments not otherwise included) issued by subsidiaries and held by third parties (amount allowed in group Tier 2) | **–** | – |
| *of which: instruments issued by subsidiaries subject to phase-out* | **–** | – |
| General allowance | **235** | 398 |
| **Total regulatory adjustments to Tier 2 Capital** | **(50)** | (51) |
| **Tier 2 Capital (T2)** | **8,188** | 7,235 |
| **Total Capital (TC = T1 + T2)** | **75,309** | 57,201 |
| **Risk-Weighted Assets and Leverage Ratio Exposures** | | |
| Risk-Weighted Assets | **363,997** | 325,433 |
| Leverage Ratio Exposures | **1,189,990** | 976,690 |
| **Capital Ratios** (%) | | |
| Common Equity Tier 1 Ratio | **16.7** | 13.7 |
| Tier 1 Capital Ratio | **18.4** | 15.4 |
| Total Capital Ratio | **20.7** | 17.6 |
| TLAC Ratio | **33.1** | 27.8 |
| Leverage Ratio | **5.6** | 5.1 |
| TLAC Leverage Ratio | **10.1** | 9.3 |

(1) Calculated in accordance with OSFI's CAR Guideline and LR Guideline, as applicable. Non-qualifying Additional Tier 1 and Tier 2 Capital instruments were phased out at a rate of 10% per year from January 1, 2013 to January 1, 2022.

Our CET1 Capital was $60.9 billion as at October 31, 2022, compared with $44.5 billion as at October 31, 2021. CET1 Capital increased, driven by the benefit of fair value management actions related to the announced acquisition of Bank of the West, strong retained earnings growth, the issuance of common shares through a public offering under the DRIP, the impact of foreign exchange movements, and the elimination of goodwill and intangible assets related to the EMEA Asset Management business, which was sold during the year, partially offset by a legal provision.

Tier 1 Capital and Total Capital were $67.1 billion and $75.3 billion, respectively, as at October 31, 2022, compared with $50.0 billion and $57.2 billion, respectively, as at October 31, 2021. The increase in Tier 1 Capital was primarily due to the factors impacting CET1 Capital and issuances of AT1 capital instruments, partially offset by preferred share redemptions. Total Capital was higher, primarily due to the factors impacting Tier 1 Capital and issuances of subordinated notes, partially offset by redemptions.

## Risk-Weighted Assets

RWA were $364.0 billion as at October 31, 2022, an increase from $325.4 billion as at October 31, 2021. Credit Risk RWA were $295.5 billion as at October 31, 2022, an increase from $272.9 billion as at October 31, 2021, primarily resulting from increased asset size driven by wholesale and commercial lending growth and the impact of foreign exchange rate movements, partially offset by positive asset quality impacts, risk transfer transactions and the transition of certain portfolios treated under the standardized approach to the advanced approach. As noted above, the impact of foreign exchange rate movements is largely offset in the CET1 Ratio. Market Risk RWA were $13.5 billion as at October 31, 2022, an increase from $12.1 billion as at October 31, 2021, primarily attributable to higher volatility and changes in portfolio composition during the year. Operational Risk RWA were $42.4 billion as at October 31, 2022, an increase from $40.5 billion as at October 31, 2021, primarily due to growth in our average gross income. The capital floor adjustment reflected in our RWA was $12.6 billion as at October 31, 2022, driven by asset quality changes and the transition of certain portfolios to the advanced RWA approach. The capital floor was not operative in the prior year.

| (Canadian $ in millions)<br>As at October 31 | **2022** | 2021 |
|---|---|---|
| Credit Risk | | |
| Wholesale | | |
| Corporate, including specialized lending | **123,595** | 117,876 |
| Corporate small and medium-sized enterprises | **45,479** | 43,562 |
| Sovereign | **4,833** | 5,369 |
| Bank | **4,138** | 4,345 |
| Retail | | |
| Residential mortgages, excluding home equity line of credit | **10,923** | 8,712 |
| Home equity line of credit | **5,915** | 5,241 |
| Qualifying revolving retail | **7,408** | 6,515 |
| Other retail, excluding small and medium-sized enterprises | **16,098** | 15,406 |
| Retail small and medium-sized enterprises | **11,844** | 9,544 |
| Equity | **6,441** | 3,741 |
| Trading book | **11,036** | 13,066 |
| Securitization | **9,530** | 4,570 |
| Other credit risk assets – non-counterparty managed assets | **24,095** | 22,587 |
| Scaling factor for credit risk assets under AIRB Approach (1) | **14,189** | 12,324 |
| Total Credit Risk | **295,524** | 272,858 |
| Market Risk | **13,522** | 12,066 |
| Operational Risk | **42,353** | 40,509 |
| **Risk-Weighted Assets before floor** | **351,399** | 325,433 |
| Floor adjustment (2) | **12,598** | – |
| **Total Risk-Weighted Assets** | **363,997** | 325,433 |

(1) Basel III framework requires an additional 6% scaling factor to be applied to RWA amounts for credit risk under the Advanced Internal Ratings Based (AIRB) Approach.
(2) The bank is subject to capital floor requirements as prescribed in OSFI's CAR Guideline. Total RWA is increased by a floor adjustment amount, which is calculated based on the standardized methodology.

## Economic Capital

Economic capital is an expression of the enterprise's capital demand requirement relative to its view of the economic risks in its underlying business activities. It represents management's estimation of the likely magnitude of economic losses that could occur should severely adverse situations arise. Economic loss is the loss in economic or market value incurred over a specified time horizon at a defined confidence level, relative to the expected loss over the same time horizon. Economic capital is calculated for various types of risk, including credit, market (trading and non-trading), operational, business and insurance, based on a one-year time horizon using a defined confidence level.

## Economic Capital and RWA by Operating Group and Risk Type

(As at October 31, 2022)

**BMO Financial Group**

| **Operating Groups** | **Personal and Commercial Banking** | **BMO Wealth Management** | **BMO Capital Markets** | **Corporate Services** |
|---|---|---|---|---|
| **Economic Capital by Risk Type** (%) | | | | |
| Credit | 76% | 29% | 60% | 80% |
| Market | 7% | 30% | 24% | 20% |
| Operational/Other | 17% | 41% | 16% | – |
| **RWA by Risk Type** (Canadian $ in millions) | | | | |
| Credit | 187,119 | 20,685 | 72,417 | 27,901 |
| Market | – | 22 | 13,500 | – |
| Operational | 23,576 | 6,314 | 12,463 | – |

## Capital Management Activities

During fiscal 2022, we issued approximately 20.8 million common shares through a public offering to finance a portion of the purchase price for the announced acquisition of Bank of the West and approximately 8.3 million common shares through the DRIP and the exercise of stock options.

During fiscal 2022, we completed Tier 1 and Tier 2 Capital instrument issuances and redemptions, as outlined in the table below.

## Capital Instrument Issuances and Redemptions

| As at October 31, 2022 | Issuance or redemption date | Number of shares | Amount (in millions) |
|---|---|---|---|
| **Common shares issued** | | 29.1 | $ 4,162 |
| **Tier 1 Capital** | | | |
| Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 38 | February 25, 2022 | 24.0 | $ 600 |
| Issuance of 5.625% Limited Recourse Capital Notes, Series 2 | March 15, 2022 | | $ 750 |
| Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 40 | May 25, 2022 | 20.0 | $ 500 |
| Issuance of Non-Cumulative 5-Year Fixed Rate Reset Class B Preferred Shares, Series 50 | July 27, 2022 | 0.5 | $ 500 |
| Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 42 | August 25, 2022 | 16.0 | $ 400 |
| Issuance of 7.325% Limited Recourse Capital Notes, Series 3 | September 13, 2022 | | $ 1,000 |
| **Tier 2 Capital** | | | |
| Issuance of 3.088% Subordinated Notes due 2037 | January 10, 2022 | | USD 1,250 |
| Redemption of Series I Medium-Term Notes, Second Tranche | June 1, 2022 | | $ 850 |
| Issuance of Series L Medium-Term Notes, First Tranche | October 27, 2022 | | $ 750 |

If an NVCC trigger event were to occur, NVCC instruments would be converted into BMO common shares pursuant to automatic conversion formulas, with the conversion price based on the greater of: (i) a floor price of $5.00; and (ii) the current market price of BMO common shares at the time of the trigger event (calculated using a 10-day weighted average). Based on a floor price of $5.00, these NVCC instruments would be converted into approximately 3.9 billion BMO common shares, assuming no accrued interest and no declared and unpaid dividends.

Further details on subordinated debt and share capital are provided in Notes 15 and 16 of the consolidated financial statements.

## Outstanding Shares and NVCC Instruments

| As at October 31 | Number of shares or dollar amount (in millions) | Dividends declared per share | | |
|---|---|---|---|---|
| | | **2022** | 2021 | 2020 |
| **Common shares** | 677 | **$ 5.44** | $4.24 | $ 4.24 |
| **Class B Preferred shares** | | | | |
| Series 25 (1) | – | **–** | $0.34 | $ 0.45 |
| Series 26 (1) | – | **–** | $0.23 | $ 0.52 |
| Series 27* | $ 500 | **$ 0.96** | $0.96 | $ 0.96 |
| Series 29* | $ 400 | **$ 0.91** | $0.91 | $ 0.91 |
| Series 31* | $ 300 | **$ 0.96** | $0.96 | $ 0.96 |
| Series 33* | $ 200 | **$ 0.76** | $0.76 | $ 0.90 |
| Series 35* (2) | – | **–** | – | $ 1.25 |
| Series 36* (2) | – | **–** | – | $58.50 |
| Series 38* (3) | – | **$ 0.30** | $1.21 | $ 1.21 |
| Series 40* (4) | – | **$ 0.56** | $1.13 | $ 1.13 |
| Series 42* (5) | – | **$ 0.83** | $1.10 | $ 1.10 |
| Series 44* | $ 400 | **$ 1.21** | $1.21 | $ 1.21 |
| Series 46* | $ 350 | **$ 1.28** | $1.28 | $ 1.28 |
| Series 50* | $ 500 | **$24.64** | – | – |
| **Additional Tier 1 Capital Notes*** | | | | |
| 4.800% Additional Tier 1 Capital Notes | US$ 500 | **na** | na | na |
| 4.300% Limited Recourse Capital Notes, Series 1 (6) | $1,250 | **na** | na | na |
| 5.625% Limited Recourse Capital Notes, Series 2 (6) | $ 750 | **na** | na | na |
| 7.325% Limited Recourse Capital Notes, Series 3 (6) | $1,000 | **na** | na | na |
| **Medium-Term Notes*** (7) | | | | |
| 3.803% Subordinated Notes | US$1,250 | **na** | na | na |
| 4.338% Subordinated Notes | US$ 850 | **na** | na | na |
| Series J – First Tranche | $1,000 | **na** | na | na |
| Series J – Second Tranche | $1,250 | **na** | na | na |
| Series K – First Tranche | $1,000 | **na** | na | na |
| 3.088% Subordinated Notes | US$1,250 | **na** | na | na |
| Series L – First Tranche | $ 750 | **na** | na | na |
| **Stock options** | | | | |
| Vested | 2.6 | | | |
| Non-vested | 3.3 | | | |

* Convertible into common shares.
(1) Redeemed in August 2021.
(2) Redeemed in November 2020.
(3) Redeemed in February 2022.
(4) Redeemed in May 2022.
(5) Redeemed in August 2022.
(6) Convertible into common shares by virtue of recourse to the Preferred Shares Series 48, Preferred Shares Series 49 and Preferred Shares Series 51, respectively. Refer to Note 16 of the consolidated financial statements for conversion details.
(7) Note 15 of the consolidated financial statements includes details on the NVCC Medium-Term Notes.
na – not applicable
Note 16 of the consolidated financial statements includes details on share capital and other equity instruments.

## Dividends

Dividends per common share declared in fiscal 2022 totalled $5.44, an increase of 28% from the prior year. Annual dividends declared represented 27% of reported net income and 41% of adjusted net income available to common shareholders on a last twelve-month basis.

Our target dividend payout range (common share dividends as a percentage of net income available to shareholders, less preferred share dividends and distributions on other equity instruments, based on earnings over the last twelve months) is 40% to 50%, providing shareholders with a competitive dividend yield. Our target dividend payout range seeks to provide shareholders with stable income, while retaining sufficient earnings to support anticipated business growth, fund strategic investments and support capital adequacy. BMO resumed dividend increases in fiscal 2022, once OSFI lifted its restriction on dividend increases and common share repurchases, which had been in effect from March 13, 2020 to November 4, 2021.

At year-end, our common shares provided a 4% annualized dividend yield based on the year-end closing share price. On December 1, 2022, we announced that the Board of Directors had declared a quarterly dividend on common shares of $1.43 per share, an increase of $0.10 per share or 8% from the prior year. The dividend is payable on February 28, 2023 to shareholders of record on January 30, 2023.

## Shareholder Dividend Reinvestment and Share Purchase Plan

Common shareholders may elect to have their cash dividends reinvested in common shares of BMO, in accordance with the Shareholder Dividend Reinvestment and Share Purchase Plan (DRIP).

During fiscal 2022, common shares to supply the DRIP were issued from treasury at a 2% discount from the then-current market price except in the first quarter, when common shares to supply the DRIP were purchased on the open market. Such shares will continue to be issued from treasury at a 2% discount until further notice. During fiscal 2021, common shares to supply the DRIP were purchased on the open market.

## Eligible Dividends Designation

For the purposes of the *Income Tax Act (Canada)* or any similar provincial and territorial legislation, BMO designates all dividends paid or deemed to be paid on both its common and preferred shares as "eligible dividends", unless indicated otherwise.

**Caution**

This Enterprise-Wide Capital Management section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.



# Off-Balance Sheet Arrangements

We enter into a number of off-balance sheet arrangements in the normal course of operations, and these include structured entities (SEs), credit instruments and guarantees.

## Structured Entities and Securitization

We carry out certain business activities through arrangements involving SEs, using them to obtain sources of liquidity by securitizing certain of our financial assets, secure customer transactions, or pass our credit risk exposure to holders of the vehicles' securities. For example, we enter into transactions with SEs in which we transfer assets, including mortgage loans, mortgage-backed securities, credit card loans, real estate lines of credit, auto loans and equipment loans, in order to obtain alternate sources of funding or as part of our trading activities. Note 6 of the consolidated financial statements describes the loan securitization activities carried out through third-party programs such as the Canada Mortgage Bond Program. Note 7 of the consolidated financial statements provides further details of our interests in both consolidated and unconsolidated SEs. Under IFRS, we consolidate an SE if we control the entity. We consolidate our own securitization vehicles, certain capital and funding vehicles, and other structured entities established to meet our own as well as our customers' needs. We do not consolidate our Canadian and U.S. customer securitization vehicles, certain capital vehicles, various BMO-managed funds or various other structured entities where investments are held. Further details on our Canadian and U.S. customer securitization vehicles are provided below.

**BMO-Sponsored Securitization Vehicles**

We sponsor various vehicles that fund assets originated either by us (which are then securitized through a bank securitization vehicle) or by our customers (which are then securitized through three Canadian customer securitization vehicles and one U.S. customer securitization vehicle). We earn fees for providing services related to these customer securitization vehicles, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicles. These fees totalled approximately $140 million in fiscal 2022 ($132 million in fiscal 2021).

***Canadian Customer Securitization Vehicles***

These vehicles provide customers with access to financing either from us or from the asset-backed commercial paper (ABCP) markets. Customers sell either their assets or an interest in their assets into these vehicles, which then issue ABCP to either investors or us to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO.

Our exposure to potential losses arises from the purchase of ABCP issued by the vehicles, any related derivative contracts entered into with the vehicles, and the liquidity support provided to the market-funded vehicles. We use the credit adjudication process in deciding whether to enter into these arrangements, just as we do when extending credit in the form of a loan.

Two of these customer securitization vehicles are market-funded, while the third is funded directly by the bank. We do not control these entities and therefore they are not consolidated. Further information on the consolidation of customer securitization vehicles is provided in Note 7 of the consolidated financial statements.

We provide liquidity facilities to the market-funded vehicles, which may require that we provide additional financing to the vehicles should certain events occur. The total committed and undrawn amount under these liquidity facilities and undrawn amounts of the BMO funded vehicle as at October 31, 2022 totalled $7.1 billion ($5.4 billion as at October 31, 2021). This amount comprises part of the commitments outlined in Note 24 of the consolidated financial statements.

The market-funded vehicles had a total of $4.5 billion of ABCP outstanding as at October 31, 2022 ($3.6 billion in 2021). The ABCP issued by the market-funded vehicles is rated R-1(high) by DBRS and P1 by Moody's. Our holdings of ABCP, as distributing agent of ABCP issued by the market-funded vehicles, totalled $573 million as at October 31, 2022 ($24 million in 2021).

The assets of each of these market-funded vehicles consist primarily of exposure to diversified pools of Canadian automobile-related receivables and Canadian conventional residential mortgages. These two asset classes represent 66% (62% in 2021) of the aggregate assets of these vehicles as at October 31, 2022.

***U.S. Customer Securitization Vehicle***

We sponsor one market-funded customer securitization vehicle in the United States that provides customers with access to financing in the U.S. ABCP market. Customers sell either their assets or an interest in their assets into this vehicle, which then issues ABCP to investors to fund the purchases. The sellers remain responsible for servicing the assets involved in the related financing and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO.

Our exposure to potential losses arises from the purchase of ABCP issued by the vehicle, any related derivative contracts entered into with the vehicle, and the liquidity support provided to the vehicle. We use the credit adjudication process in deciding whether to enter into these arrangements, just as when extending credit in the form of a loan.

Effective October 31, 2021, we concluded that we no longer control this vehicle, and therefore deconsolidated this vehicle, since our involvement has changed from principal to agent, as reflected primarily by the change in our exposure to its variable returns. Further information on the vehicle is provided in Note 7 of the consolidated financial statements.

The vehicle had US$4.8 billion of ABCP outstanding as at October 31, 2022 (US$3.1 billion in 2021). The ABCP issued by the vehicle is rated A1 by S&P and P1 by Moody's.

We provide committed liquidity support facilities to the vehicle, with the undrawn amount totalling US$8.3 billion as at October 31, 2022 (US$6.5 billion in 2021). This amount comprises part of the commitments outlined in Note 24 of the consolidated financial statements. The vehicle's assets primarily have exposure to diversified pools of U.S. automobile-related receivables, and student loans. These two asset classes represent 88% (82% in 2021) of the aggregate assets of the vehicle as at October 31, 2022.

## Credit Instruments

To meet the financial needs of our clients, we use a variety of off-balance sheet credit instruments. These include guarantees and standby letters of credit, which represent our obligation to make payments to third parties on behalf of a customer if the customer is unable to make the required payments or meet other contractual requirements. We also write documentary and commercial letters of credit, which represent agreements to honour drafts presented by a third party upon completion of specified activities. Credit commitments are off-balance sheet arrangements that represent our commitment to customers to grant them credit in the form of loans or other financings for specific amounts and maturities, subject to certain conditions.

There are a large number of credit instruments outstanding at any time. Our customers are broadly diversified, and we do not anticipate events or conditions that would cause a significant number of customers to fail to perform in accordance with the terms of their contracts. We use the credit adjudication process in deciding whether to enter into these arrangements, just as we do when extending credit in the form of a loan. We monitor off-balance sheet credit instruments in order to avoid undue concentrations in any geographic region or industry.

The maximum amount payable by BMO in relation to these credit instruments was approximately $228 billion as at October 31, 2022 ($202 billion in 2021). However, this amount is not representative of our likely credit exposure or the liquidity requirements for these instruments, as it does not take into account customer behaviour, which suggests that only a portion of our customers would utilize the facilities related to these instruments, nor does it take into account any amounts that could be recovered under recourse and collateral provisions.

For the credit commitments outlined in the preceding paragraphs, in the absence of an event that triggers a default, early termination by BMO may result in a breach of contract.

Further information on these instruments can be found in Note 24 of the consolidated financial statements.

## Guarantees

Guarantees include contracts under which we may be required to make payments to a counterparty based on changes in the value of an asset, liability or equity security that the counterparty holds. Contracts under which we may be required to make payments if a third party does not perform according to the terms of a contract, and contracts under which we provide indirect guarantees of indebtedness, are also considered guarantees. In the normal course of business, we enter into a variety of guarantees, including standby letters of credit, backstop and other liquidity facilities, and derivatives contracts or instruments (including, but not limited to, credit default swaps), as well as indemnification agreements.

The maximum amount payable by BMO in relation to these guarantees was approximately $59 billion as at October 31, 2022 ($40 billion in 2021). However, this amount is not representative of our likely exposure, as it does not take into account customer behaviour, which suggests that only a portion of the guarantees would require us to make any payments, nor does it take into account any amounts that could be recovered under recourse and collateral provisions.

For a more detailed discussion of these arrangements, refer to Note 24 of the consolidated financial statements.

**Caution**

This Off-Balance Sheet Arrangements section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Enterprise-Wide Risk Management

As a diversified financial services company providing banking, wealth management, capital markets and insurance services, BMO is exposed to a variety of risks that are inherent in our business activities. A disciplined and integrated approach to managing risk is fundamental to the success of our operations. Our risk management framework provides independent risk oversight across the enterprise and is integral to building competitive advantage.

**Enterprise-Wide Risk Management** outlines BMO's approach to managing the key financial risks and other related risks that are inherent in its business activities, as discussed in the following sections:





Text and tables presented in a blue-tinted font in the Enterprise-Wide Risk Management section of the MD&A form an integral part of the 2022 audited annual consolidated financial statements. They present required disclosures as set out by the International Accounting Standards Board in IFRS 7, *Financial Instruments – Disclosures*, which permits cross-referencing between the notes to the consolidated financial statements and the MD&A. Refer to Notes 1 and 5 of the consolidated financial statements.

## Risks That May Affect Future Results

### Top and Emerging Risks That May Affect Future Results

BMO is exposed to a variety of evolving internal and external events that may have an impact on our overall risk profile. These events have the potential to affect our business, the results of our operations and our financial condition. The fundamental undertaking in the risk management process is to proactively identify, assess, manage, monitor and report on an array of risks arising from these events. The identification of specific types of risk involves several forums for discussion with the Board of Directors, senior management and business leaders, and incorporates both bottom-up and top-down approaches. Risks are assessed, and supported by scenario analysis. These risk assessments inform the development of action plans related to our exposure to certain events.

Particular attention has been given to the following risks, reflecting their potential to materially impact the bank's financial results, operational efficiency, strategic direction or reputation.

**General Economic Conditions**

Our earnings are affected by the general economic conditions prevailing in Canada, the United States and other jurisdictions in which we conduct business. In the past year, global economies continued to recover from the effects of the COVID-19 pandemic. The Canadian economy outperformed global peers at the start of the year, whereas in the United States, real GDP growth began to slow early in the year. Across North America, growth is slowing due to aggressive monetary tightening, weaker global demand, rising interest rates, supply constraints, labour shortages and high inflation rates. However, one partial offsetting factor is that households have retained a significant amount of the savings they accumulated during the pandemic, which is supporting pent-up demand for travel, in-person services and motor vehicles. The recovery faces headwinds generated by ongoing disruptions to global supply chains, the conflict in Ukraine, COVID-19 restrictions in China, volatile oil and natural gas prices, price and wage inflation and labour market challenges. Rising geopolitical tensions are expected to contribute to a decline in growth rates in North American economies through the coming year. Refer to the Geopolitical Risk and Escalating Trade Disputes section for further discussion of these risks.

Management continues to review the economic environment in which we operate, to identify significant changes in key economic indicators. In the event of a significant change in economic conditions, management assesses our portfolio and business strategies and develops contingency plans to address any adverse developments.

**Cyber and Cloud Security Risk**

Our exposure to banking cybersecurity risks arises from the ever-increasing reliance on internet and cloud technologies, coupled with the remote or hybrid work environment, and extensive dependence on advanced digital technologies to process data. Heightened geopolitical tensions are also contributing to elevated global exposures to cybersecurity risks. These risks include the threat of data loss resulting in potential exposure of customer or employee information, identity theft and fraud. Ransomware or denial of service attacks could result in system failure and service disruption. Threat campaigns are becoming better organized and more sophisticated, with reported data breaches, often through third-party suppliers, that can negatively impact the company's brand and reputation. At BMO, we are responding by investing in our Financial Crimes Unit and technological infrastructure, equipping our team to detect and address cybersecurity threats across North America, Europe and Asia in order to help keep our customers' and employees' data secure.

**Technology Resiliency**

As the adoption of digital banking continues to grow, we continue to invest in innovative enhancements to our technological capabilities in order to meet our customers' expectations and keep their data secure. Our customers, employees and suppliers have increasingly come to rely on technology platforms and the Internet of Things to manage and support their personal, business and investment banking activities. Given the extent to which BMO's operations rely on technology, it is important to maintain platforms that can function at high levels of operational reliability and resiliency, particularly with respect to business-critical systems.

In line with our Digital First strategy, we are focusing on technology innovations, such as advanced data management, analytical tools and artificial intelligence, to generate insights that will improve the way we do business and serve our customers.

**Geopolitical Risk and Escalating Trade Disputes**

The escalation of geopolitical tensions in Europe caused by the conflict in Ukraine is having significant global effects, including high energy prices and the erosion of business confidence. Sanctions imposed on Russia by Ukraine's allies have also aggravated supply shortages, particularly energy, across the global economy.

Trade tensions between China and the United States remain elevated, as the competition for technology dominance intensifies and both the United States and China seek to lessen economic dependence on each other. This could adversely affect business investment, and could prove especially problematic for commodity-producing countries such as Canada. Trade disputes have also arisen between Canada and China over the past several years. Within North America, the Canada-United States-Mexico Agreement (CUSMA) has reduced, but not eliminated, uncertainty about continental trading arrangements and disputes between the three countries.

Although it is difficult to predict and mitigate the potential economic and financial effects of trade-related events on the Canadian and U.S. economies, we actively monitor global and North American trends and continually assess our businesses in the context of these trends. Our lending portfolio has limited direct exposure outside North America. However, our customers rely on global trade and sustained economic growth. To mitigate exposure to geopolitical risk, we maintain a diversified portfolio that is continually monitored, in addition to contingency plans that address any possible adverse developments. We stress test our portfolios, business plans and capital adequacy against severely adverse scenarios arising from trade-related shocks, and we establish contingency plans and mitigation strategies to address and offset the consequences of possible adverse political and economic developments.

BMO's credit exposure by geographic region is set out in Tables 4, 5 and 8 to 10 in the Supplemental Information and in Note 4 of the consolidated financial statements.

**Benchmark Interest Rate Reform**

The transition from London interbank rates (LIBORs) and other interbank offered rates (IBORs) to alternative reference rates (ARRs) continues. BMO transitioned all sterling, euro, Swiss franc, Japanese yen and 1-week and 2-month USD LIBOR exposures to ARRs, in advance of the December 31, 2021 discontinuation of these rates.

In addition, BMO ceased issuing new USD LIBOR-based loans and instruments after December 31, 2021, except in permitted circumstances, in compliance with U.S. prudential regulatory supervisory guidance. As we approach the June 30, 2023 cessation date for the remaining USD LIBOR settings, overall USD LIBOR exposures are being reduced, except for fluctuations due to permitted derivatives activity to offset existing LIBOR risk. Existing USD LIBOR derivative exposures are expected to largely transition when central counterparties convert existing LIBOR derivatives to Secured Overnight Financing Rate (SOFR) derivatives by the cessation date.

On December 16, 2021, the Canadian Alternative Reference Rate working group (CARR) recommended the administrator, Refinitiv Benchmark Services UK Limited (RBSL), cease publication of Canadian Dollar Offered Rate (CDOR) settings immediately after June 28, 2024, using a two-stage transition approach. By the end of the first stage on June 30, 2023, CARR expects that all new derivative contracts and securities will use the Canadian Overnight Repo Rate Average (CORRA), with the exception of derivatives that hedge or reduce CDOR exposures from derivatives, or securities transacted before June 30, 2023, or loan agreements entered into before June 28, 2024. All remaining CDOR exposures should be transitioned to CORRA by June 28, 2024, marking the end of the second stage.

On May 16, 2022, following public consultation, RBSL announced that all remaining CDOR settings will cease publication immediately after June 28, 2024, in line with CARR recommendations. The enterprise IBOR Transition Office (ITO) adjusted all affected project plans as a result of the RBSL announcement.

**Climate Change and Other Environmental and Social Risks**

BMO is exposed to risks related to environmental events and extreme weather conditions that could potentially disrupt our operations, impact our customers and counterparties, and result in lower earnings and higher losses. Factors contributing to heightened environmental risks include the impacts of climate change and the continued intensification of development in areas of greater environmental sensitivity. Business continuity management plans provide us with the roadmap and tools that would support the restoration, maintenance and management of critical operations and processes in the event of a business disruption.

BMO is also exposed to risks related to borrowers that may experience financial losses or increases in operating costs as a result of climate-related litigation or policies, such as carbon emissions pricing, or that may experience a decline in revenue as new and emerging technologies disrupt or displace demand for certain commodities, products and services. As a global bank, we aim to help drive the transformation to a net-zero carbon economy by partnering with our clients to accelerate the low-carbon transition, in part through the establishment of the BMO Climate Institute announced in March 2021, and our dedicated Energy Transition Group.

Legal and regulatory, business or reputation risks could arise from actual or perceived actions, or inaction, in our operations and those of our customers in relation to climate change and other environmental and social risk issues, or our disclosures related to these matters. Risks related to these issues could also affect our customers, suppliers or other stakeholders, which could give rise to new business or reputation risks. Globally, climate-related litigation or enforcement measures could arise from new and more stringent obligations to manage and report climate-related risks.

Refer to the Environmental and Social Risk section for further discussion of these risks.

**Canadian Housing Market and Consumer Leverage**

Household debt and housing affordability risks are elevated. Successive hikes in interest rates by central banks have primed the housing market for a correction through to 2023 and are slowing demand. Although housing prices have started to decline, the annual income needed to buy a home has increased significantly due to rising mortgage rates. In addition, the pandemic may have caused permanent changes in consumer behaviours and preferences, as well as changes in how and where work is performed, including the widespread adoption of remote working arrangements. These changes could lead to structural shifts in the demand for housing based on geographic and other characteristics, and could dampen sales activity, home prices and property values within our current mortgage portfolio.

Housing affordability continues to be a challenge, especially in the Greater Toronto Area (GTA) and Greater Vancouver Area (GVA) and their surrounding regions, and represents an ongoing barrier to entry for potential first-time homebuyers. Although unemployment rates remain historically low, inflation and higher interest rates are putting a strain on household budgets, which is reducing overall household purchasing power. Further increases in interest rates, if material, could pressure the finances of households with adjustable-rate mortgages, variable-rate loans that reach their "trigger rate" where the payment no longer covers interest on the loan, and fixed-rate loans that come up for renewal. Prolonged economic uncertainty could also cause households to continue to focus on building savings.

Reductions in home sales activity, particularly in the GTA and GVA, would impact mortgage origination volumes, while lower property values could result in higher provisions for credit losses. BMO's prudent lending practices, which include the application of additional underwriting scrutiny and regulatory stress testing at origination on higher-value and higher loan-to-value transactions, and the setting and close monitoring of regional, property type and customer segment concentration limits, support the soundness of BMO's Canadian real estate lending portfolio. Further, stress test analysis suggests that even significant price declines and extremely challenging economic conditions would result in manageable losses, primarily due to insurance coverage and the significant level of equity held by owners with seasoned loans.

**Inflation**

Inflation rates in North America have increased sharply and are expected to decline slowly over time. Central banks began to implement corrective measures through a series of interest rate increases in 2022. Further interest rate increases will put additional pressure on our customers and increase the risk of an economic recession in North America. Higher inflation rates are having an impact on both our operations and the operations of our clients, and could have a negative effect on our earnings through higher provisions for credit losses and higher operating costs. We continue to monitor inflationary pressures in North America and assess any potential effects on our portfolios, interest margins and operating costs. Refer to the Canadian Housing Market and Consumer Leverage section and the General Economic Conditions section for further discussion of these risks.

## Other Factors That May Affect Future Results

**Fiscal and Monetary Policies and Other Economic Conditions in the Countries in which BMO Conducts Business**

BMO's earnings are affected by the fiscal and monetary policies and other economic conditions prevailing in Canada, the United States and other jurisdictions in which we do business. These policies and conditions may reduce profitability and increase economic uncertainty in specific businesses and markets, which may affect our customers and counterparties, and potentially contribute to a greater risk of default. Changes in fiscal and monetary policies are difficult to predict. Higher levels of government and business debt resulting from the pandemic may create future vulnerabilities that could impact our markets and our operating results. Interest rate fluctuations could have an impact on our earnings, the value of our investments, the credit quality of our loans to customers and counterparty exposure, and the capital markets that we access.

Canadian dollar value changes relative to other currencies have affected, and could continue to affect, the business operations and results of clients with significant earnings or input costs denominated in foreign currencies. Our foreign operation investments are primarily denominated in U.S. dollars, and the foreign exchange impact on our U.S.-dollar-denominated risk-weighted assets and capital deductions may result in variability in our capital ratios. Refer to the Enterprise-Wide Capital Management section. The value of the Canadian dollar relative to the U.S. dollar will also affect the contribution of U.S. operations to Canadian-dollar profitability.

Hedging positions may be taken to manage the pending Bank of the West acquisition, as well as interest rate exposures and foreign exchange impacts, and to partially offset the effects of Canadian dollar/U.S. dollar exchange rate fluctuations on the bank's financial results. Refer to the Foreign Exchange section and the Market Risk section for a more complete discussion of our exposure to foreign exchange and interest rate risk.

**Regulatory Requirements**

The financial services industry is highly regulated, and BMO has experienced increasing complexity in regulatory requirements and expectations, as governments and regulators around the world continue to pursue major reforms intended to strengthen the stability of the financial system and protect key markets and participants. Consequently, there is the potential for increases in regulatory capital requirements and additional compliance costs, which could lower returns and affect growth. These reforms could also affect the cost and availability of funding and the level of the bank's market-making activities. Regulatory reforms may also impact fees and other revenues for certain operating groups. In addition, differences in laws and regulations enacted by a range of national regulatory authorities may provide advantages to our international competitors, which could affect our ability to compete. We monitor such developments, and other potential changes, so that we are well-positioned to respond and implement any necessary changes.

Failure to comply with applicable legal and regulatory requirements and expectations could result in legal proceedings, financial losses, regulatory sanctions, enforcement actions, criminal convictions and penalties, an inability to execute business strategies, a decline in investor and customer confidence, and damage to our reputation. Refer to the Legal and Regulatory Risk section for a more complete discussion of BMO's management of legal and regulatory risk.

**Tax Legislation and Interpretations**

Legislative changes and changes in tax policy, including their interpretation by tax authorities and the courts, may impact earnings. Tax laws, as well as interpretations of tax laws and policy by tax authorities, may change as a result of efforts by the Canadian and U.S. federal governments, other G20 governments and the Organization for Economic Co-operation and Development (OECD) to increase taxes, broaden the tax base globally and improve tax-related reporting. For example, the Canadian government introduced legislation related to tax measures that would be applicable to certain Canadian companies in a bank or life insurer group, including a one-time 15% tax (referred to as the Canada Recovery Dividend, or CRD) and a permanent 1.5% increase in the tax rate, and has proposed to adopt the OECD Pillar 2 Model Rules, which will levy a 15% minimum tax on operations globally. Refer to the Critical Accounting Estimates and Judgments section for further discussion of income taxes and deferred taxes.

**Pending Bank of the West Acquisition**

BMO is subject to several risks related to the pending acquisition of Bank of the West. Such risks include, but are not limited to: the possibility that the announced acquisition of Bank of the West does not close when expected, or at all, because regulatory approvals or other conditions required for closing are not received or satisfied on a timely basis, or at all, or regulatory approvals are received subject to adverse conditions or requirements; the risk that BMO may be unable to realize, in the anticipated time frame, the benefits anticipated from the proposed transaction, such as it being accretive to adjusted earnings per share and creating opportunities for synergies; the risk that the business of Bank of the West may not perform as expected, or in a manner consistent with historical performance; the risk that BMO may not be able to promptly and effectively integrate Bank of the West and that the costs of integration may be higher than expected; the risk that the total amount of BMO's existing excess capital, completed financing for the transaction and capital generation anticipated before closing may not be sufficient to maintain capital targets without raising additional capital; the risk that our fair value management actions (as described in the Significant Events section) are not effective or result in unforeseen consequences; reputational risks and the reaction of Bank of the West's customers and employees to the transaction; the risk of increased exposure to regional economic and other issues as a result of expanding BMO's presence in the United States; risks related to possible demands on management time by transaction-related issues; and risks related to increased exposure to exchange rate fluctuations. Any of these and other risks related to the pending acquisition of Bank of the West including, but not limited to, the risk that our assumptions about us, Bank of the West and the announced acquisition may prove inaccurate, could adversely impact our financial results or strategic direction.

**Changes to Business Portfolio**

BMO may, from time to time, acquire companies, businesses and assets as part of its overall business strategy. We conduct thorough due diligence before completing such acquisitions. However, some acquisitions may not perform in line with our financial or strategic objectives or expectations. Our ability to successfully complete an acquisition may be subject to regulatory and shareholder approvals, and it may not be possible to determine when, if or on what terms the necessary approvals will be granted. Changes in the competitive and economic environment, as well as other factors, may result in reductions in revenue or profitability, while higher than anticipated integration costs and failure to realize expected cost savings after an acquisition could also adversely affect earnings. Integration costs may increase because of regulatory costs related to an acquisition, operational loss events, other unanticipated expenses that were not identified in the due diligence process, or demands on management time that are more significant than anticipated, as well as unexpected delays in implementing certain plans that in turn lead to delays in achieving full integration. Successful post-acquisition performance depends on retaining the clients and key employees of acquired companies and businesses and on integrating key systems and processes without disruption.

BMO also evaluates potential dispositions of assets and businesses that may no longer meet strategic objectives. When we sell assets or withdraw from a business, we may encounter difficulty in finding buyers or alternative exit strategies on acceptable terms or in a timely manner, which could delay the achievement of strategic objectives. We may also dispose of assets or a business on terms that are less desirable than anticipated or result in adverse operational or financial impacts, or greater disruption than expected, and the impact of the divestiture on revenue growth may be larger than projected. Dispositions may be subject to the satisfaction of conditions and the granting of governmental or regulatory approvals on acceptable terms that, if not satisfied or obtained, may prevent the completion of a disposition as intended, or at all.

**Critical Accounting Estimates and Accounting Standards**

BMO prepares its consolidated financial statements in accordance with IFRS. Changes that the International Accounting Standards Board makes from time to time may materially affect the way we record and report financial results. Significant new accounting policies and future changes in accounting policies are discussed in the Changes in Accounting Policies in 2022 and Future Changes in Accounting Policies sections, as well as in Note 1 of the consolidated financial statements.

The application of IFRS requires management to make significant judgments and estimates that affect the carrying amounts of certain assets and liabilities, certain amounts reported in net income, and other related disclosures. In making these judgments and estimates, we rely on the best information available at the time. However, it is possible that circumstances may change, new information may become available or models may prove to be imprecise.

BMO's financial results could be affected for the period during which any such new information or change in circumstances becomes apparent, and the extent of the impact could be significant. More information is included in the Critical Accounting Estimates and Judgments section.

**Technological Innovation and Competition**

Advancement of technological capabilities is shaping the future of everyday banking for individuals and businesses. The change in customers' behaviour and preferences for on-demand banking in recent years has led to significant progress in open banking, an increase in the use of digital currencies, a growing number of non-bank financial service providers and more banking options for customers and businesses. This shift in the financial services ecosystem creates risks for BMO, including direct competition with technology companies. In response to these challenges, we have set out a Digital First strategy to enhance customer experiences, streamline processes and reduce complexity. We continue to make investments in advanced technologies, including artificial intelligence (AI), and we have designed new talent strategies to attract and retain employees with the skills we need. In addition, we closely monitor evolving technologies and practices in the financial services industry, and we are developing new risk management approaches to identify and manage these risks.

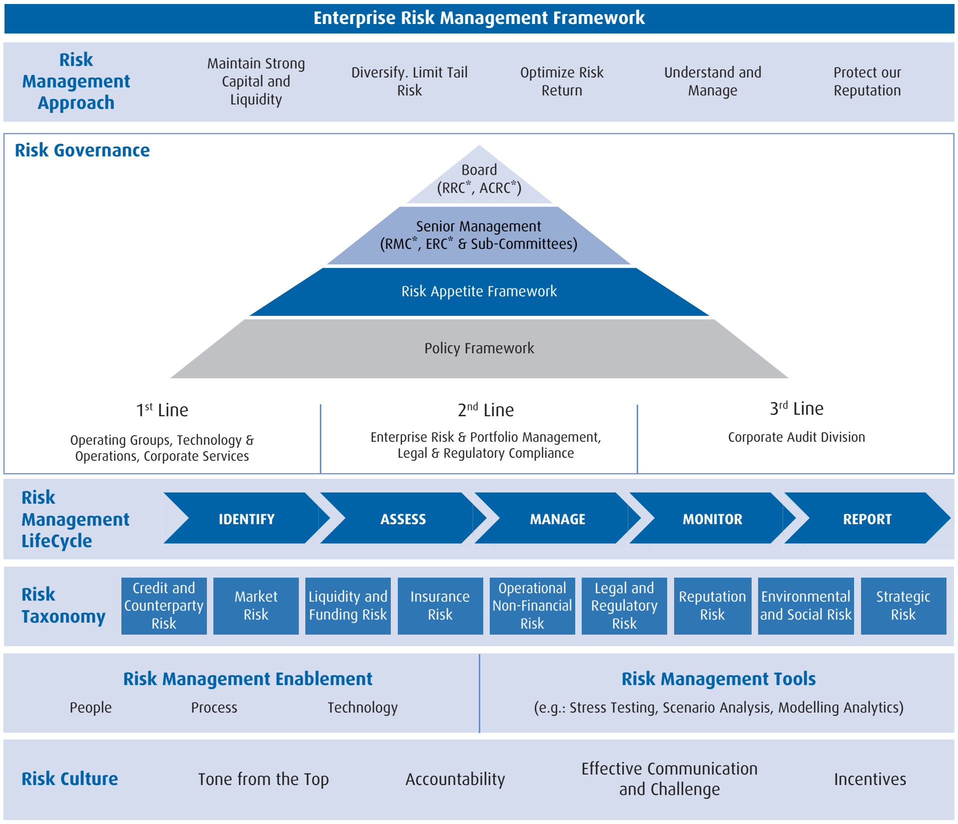
**Caution**

The Risks That May Affect Future Results section and the remainder of this Enterprise-Wide Risk Management section contain forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements. Other factors beyond BMO's control that may affect its future results are noted in the Caution Regarding Forward-Looking Statements. BMO cautions that the preceding discussion of risks that may affect future results is not exhaustive.

# Enterprise-Wide Risk Management Framework

BMO's integrated and disciplined approach to risk management is fundamental to the success of our business. Our Enterprise Risk and Portfolio Management (ERPM) group oversees the implementation and operation of the Enterprise-Wide Risk Management Framework (ERMF), and provides independent review and oversight across the enterprise on risk-related issues, in order to enable prudent and measured risk-taking that is integrated with business strategy. All elements of the ERMF function together to support informed and effective risk management, while striking an appropriate balance between risk and return.

The ERMF guides risk-taking activities in order to align them with customer needs, shareholder expectations and regulatory requirements. The ERMF also sets out our approach to risk management: maintain strong capital and liquidity positions, diversify and limit tail risk, optimize risk return, understand and manage the risks we face, and protect our reputation. Our approach to risk governance is outlined in the ERMF, which incorporates our Risk Management Life Cycle, guiding our efforts to identify, assess, manage, monitor and report on our exposure to material risks. The ERMF is supported by our people, processes and technology, along with a range of risk management tools, including modelling and analytics, stress testing and scenario analysis, and our Risk Taxonomy. All elements of the ERMF are supported by our risk culture. The ERMF provides for the direct management of each individual risk type, as well as the management of risk on an integrated basis.




*RRC: Risk Review Committee, ACRC: Audit and Conduct Review Committee, RMC: Risk Management Committee, ERC: Enterprise Regulatory Committee

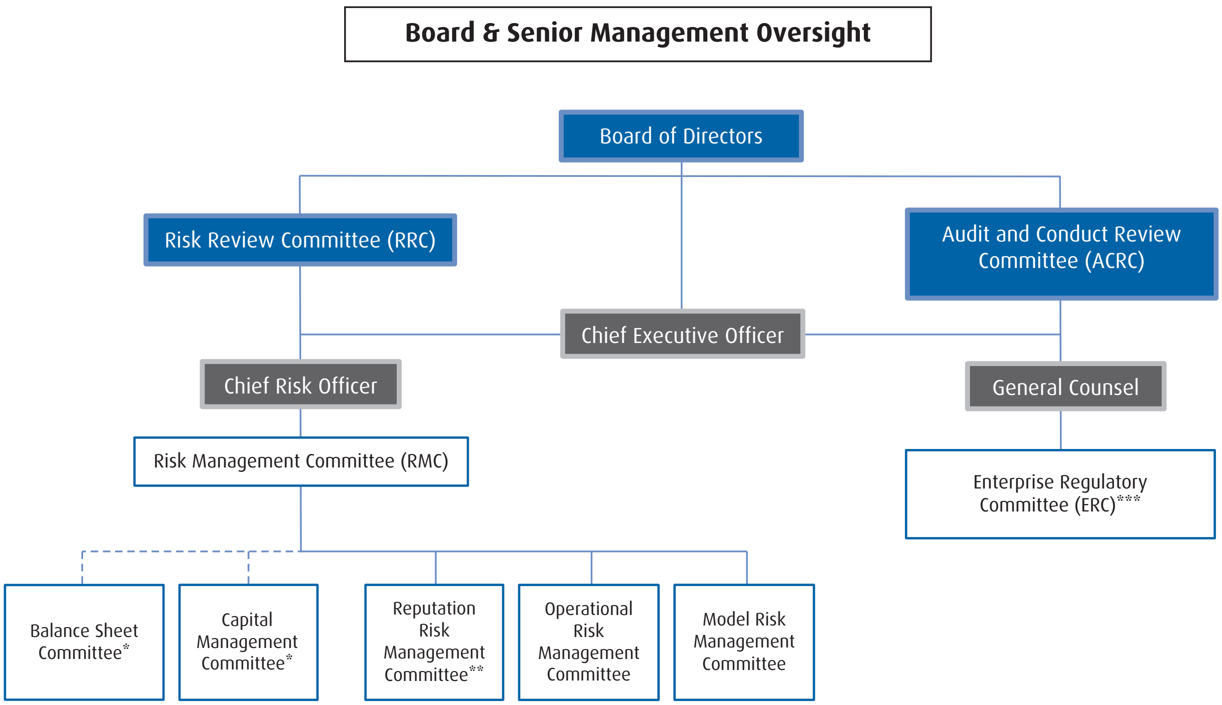
## Risk Governance

The ERMF outlines a governance approach that includes robust Board of Directors and senior management oversight, a Risk Appetite Framework, the Enterprise Policy Framework and the corresponding roles in the three-lines-of-defence operating model.

**Board of Directors and Senior Management Oversight**

Specific Board-approved policies govern our approach to the management of material risks, and oversight is exercised at all levels of the enterprise through a hierarchy of committees and individual responsibilities, as outlined in the following diagram. The Board seeks to ensure that corporate objectives are supported by a sound risk strategy and an effective ERMF that is appropriate to the nature, scale, complexity and risk profile of our operations. The Board also has overall responsibility for the bank's governance framework and corporate culture. Senior management reviews and discusses significant risk issues and action plans as they arise in the implementation of the enterprise-wide strategy, exercising oversight and governance of the risks taken across the enterprise and the processes through which exposures to such risks are identified, assessed, managed, monitored, and reported in accordance with policies, and held within approved limits and risk tolerances.

The ERMF is reviewed on a regular basis by the Risk Review Committee (RRC) of the Board, in order to exercise oversight and guide risk-taking activities.




* The Balance Sheet Committee (BSC) and Capital Management Committee (CMC) are sub-committees of the Asset and Liability Management Committee (ALCO). However, in matters related to Structural Market Risk, Liquidity & Funding Risk, and the Internal Capital Adequacy Assessment Process (ICAAP), BSC and CMC report to RMC.

** Committee is chaired by the General Counsel.

*** Committee is co-chaired by the General Counsel and Chief Risk Officer.

In addition to the oversight exercised by the Board of Directors and senior management, provisions for appropriate risk governance, supported by the three lines of defence, are in place in all significant businesses and entities. In each of the operating groups, as well as in Corporate Services, which includes Technology and Operations, management serves as the first line of defence, responsible for governance and controls, and the implementation and operation of risk management processes and procedures designed to provide effective risk management. ERPM and Legal & Regulatory Compliance, as the second line of defence, oversee the implementation and operation of risk management processes and procedures, and monitor and test risk outcomes against our risk appetite and management expectations, in order to determine whether outcomes are consistent with expected returns. Corporate Audit Division, as the third line of defence, provides independent assessment of the effectiveness of internal controls that support the risk management and governance processes. Individual governance committees establish and monitor more specific risk limits, consistent with Board-approved limits.

**Board of Directors** is responsible for supervising the management of the business and affairs of BMO. The Board, either directly or through its committees, is responsible for oversight in the following areas: strategic planning; defining risk appetite; identifying and managing risk; managing capital; fostering a culture of integrity; internal controls; succession planning and evaluation of senior management; communication; public disclosure; and corporate governance.

**Risk Review Committee (RRC) of the Board of Directors** assists the Board in fulfilling its risk management oversight responsibilities. This includes maintaining a strong risk culture; overseeing the identification and management of BMO's risks; monitoring adherence by operating groups to risk management corporate policies and standards; compliance with risk-related regulatory requirements; and evaluating the Chief Risk Officer (CRO), including input into succession planning for the CRO. The ERMF is reviewed on a regular basis by the RRC in order to provide guidance for the governance of risk-taking activities.

**Audit and Conduct Review Committee (ACRC) of the Board of Directors** assists the Board in fulfilling its oversight responsibilities for the integrity of BMO's financial reporting; the effectiveness of BMO's internal controls; the qualifications, independence and performance of the independent auditors; BMO's compliance with laws and regulations; transactions involving related parties; conflicts of interest and confidential information; and standards of business conduct and ethics.

**Chief Executive Officer (CEO)** is directly accountable to the Board for all of BMO's risk-taking activities. The CEO is supported by the CRO and the ERPM group.

**Chief Risk Officer (CRO)** reports directly to the CEO and is head of ERPM and chair of RMC. The CRO is responsible for providing independent review and oversight of enterprise-wide risks and leadership on risk issues, developing and maintaining the RMF and fostering a strong risk culture across the enterprise.

**Risk Management Committee (RMC)** brings together senior executive members of BMO management to oversee risk management across the enterprise. RMC reviews and discusses significant risk issues and action plans as they arise in the implementation of the enterprise-wide strategy. RMC exercises risk oversight and governance at the highest levels of management. This committee is chaired by the CRO, and its members include the heads of the operating groups, the CEO, the Chief Financial Officer (CFO) and the General Counsel.

**RMC Sub-Committees** have oversight responsibility for the risk implications and balance sheet impacts of management strategies, governance practices, risk measurement, model risk management and contingency planning. RMC and its sub-committees exercise oversight of the risks taken across the enterprise and the processes through which such risks are identified, assessed, managed, monitored, and reported in accordance with policies, and held within limits and risk tolerances.

**Enterprise Risk and Portfolio Management (ERPM)**, as the second line of defence, provides risk management oversight, effective challenge and independent assessment of risk and risk-taking activities. ERPM supports a disciplined approach to risk-taking by exercising its responsibility for independent transactional approval and portfolio management, policy formulation, risk reporting, stress testing, modelling and risk education. This approach promotes consistency in risk management practices and standards across the enterprise, and verifies that any risks accepted are consistent with BMO's risk appetite.

**Operating Groups and Corporate Services, including Technology and Operations**, are responsible for effectively managing risks by identifying, assessing, managing, monitoring, mitigating and reporting on exposures to risk within their respective operations and lines of business in accordance with their established risk appetite. They exercise business judgment and maintain effective policies, processes and internal controls, so that significant risk issues are escalated and reviewed by ERPM. Individual governance committees and ERPM establish and monitor risk limits that are consistent with, and subordinate to, the Board-approved limits.



## Risk Appetite Framework

BMO's Risk Appetite Framework consists of a Risk Appetite Statement and a delineation of the roles and responsibilities of senior management and the Board of Directors, and is supported by corporate policies, standards and guidelines, including related risk limits, concentration levels and controls defined therein. Risk appetite defines the amount of risk that the bank is willing to assume given its guiding principles, thereby supporting the pursuit of sound business initiatives, appropriate returns and targeted growth. Risk appetite is integrated with strategic and capital planning and performance management. The Risk Appetite Statement consists of both qualitative and quantitative specifications of our appetite for the assumption of material risks. Key risk metrics are outlined for material risks, with specific thresholds that allow senior management and the Board of Directors to monitor the current risk profile relative to risk appetite. On an annual basis, the RMC submits the Risk Appetite Statement and key risk metrics to the RRC, which in turn reviews and recommends them to the Board of Directors for approval. The Risk Appetite Statement is articulated and applied consistently across the enterprise, with operating groups and key businesses and entities developing their own respective risk appetite statements within this framework.

We believe that risk management is every employee's responsibility. This is guided by five key principles that drive our approach to managing risk across the enterprise and comprise our Risk Appetite Statement.

- **Understand and Manage** by only taking risks that are transparent and understood.
- **Protect BMO's Reputation** by adhering to principles of honesty, integrity, respect and high ethical standards in line with our Code of Conduct.
- **Diversify. Limit Tail Risk** by targeting a business mix that minimizes earnings volatility and exposure to low-probability, high-impact events.
- **Maintain Strong Capital and Liquidity** positions that meet, or exceed, regulatory requirements and market expectations.
- **Optimize Risk Return** by managing risk-adjusted exposures and making decisions that create value for shareholders.

## Risk Limits

Risk limits are set so that risk-taking activities remain within BMO's risk appetite, balancing risk diversification, exposure to loss and risk-adjusted returns. These limits inform business strategies and decisions, and are reviewed and approved by the Board of Directors or management committees, as appropriate, based on the level and granularity of the limits. They include:

- **Credit and Counterparty Risk** – limits on group and single-name exposures and material country, industry and portfolio/product segments.
- **Market Risk** – limits on economic value and earnings exposures to stress scenarios and significant market movements, as well as limits on value at risk and stress related to trading and underwriting activities.
- **Insurance Risk** – limits on policy exposures and reinsurance arrangements.
- **Liquidity and Funding Risk** – minimum limits governing the internal liquidity stress testing scenario, minimum regulatory liquidity ratio requirements, and maximum levels of asset pledging and wholesale funding, as well as limits related to liability diversification and exposure to credit and liquidity facilities.
- **Operational Risk** – key metrics for measuring operational and other non-financial risks that may have financial consequences.

The Board of Directors, after considering recommendations from the RRC and RMC, annually reviews and approves key risk limits and then delegates overall authority for these limits to the CEO. The CEO in turn delegates more specific authorities to the senior executives of the operating groups (first line of defence), who are responsible for the management of risk in their respective operations, and to the CRO. These delegated authorities allow risk officers to set risk tolerances, approve geographic and industry sector exposure limits within defined parameters, and establish underwriting and inventory limits for trading and investment banking activities. The criteria under which more specific authorities may be delegated across the organization, as well as the requirements relating to the documentation, communication and monitoring of those specific delegated authorities, are set out in corporate policies and standards.

## Enterprise Policy Framework

The Enterprise Policy Framework includes a comprehensive set of corporate policies, each of which is approved by the RRC, as well as corporate standards issued pursuant to those corporate policies that have been reviewed by the RMC and approved by senior management. Corporate policies and standards collectively outline the principles, expectations, and roles and responsibilities of senior management for ensuring that exposures to key risks are identified, assessed, managed, monitored and reported. Corporate policies and standards are reviewed and updated at a minimum every two years.

The Enterprise Policy Framework also includes supporting directives and procedures that apply across the first and second lines of defence to operationalize the requirements, roles and responsibilities, and activities outlined in those corporate policies and standards.

## Three-Lines-of-Defence Operating Model

Our ERMF is operationalized through the three-lines-of-defence approach to managing risk, as described below:

- Operating groups and Corporate Services, which includes Technology and Operations, serve as our first line of defence. They are accountable for the risks arising from their businesses, operations and exposures. They are expected to pursue business opportunities within their established risk appetite and to identify, assess, manage (which includes mitigation), monitor and report on all risks in, or arising from, their businesses, operations and exposures. The first line fulfils its responsibilities by applying risk management and reporting methodologies, by establishing appropriate internal controls in accordance with the ERMF and by monitoring the effectiveness of such controls. These processes and controls provide the framework for our lines of business to act within their delegated risk-taking authority and risk limits, as set out in corporate policies and the Risk Appetite Framework. Corporate Services, while part of our first line of defence, may also serve in a governance capacity when specific roles and responsibilities are assigned to individuals or groups under the Enterprise Policy Framework.
- The second line of defence comprises ERPM and Legal & Regulatory Compliance. The second line exercises independent oversight, offers effective challenge and provides independent assessment of risks and risk management practices, including transaction, product and portfolio risk management decisions, processes and controls applied in the first line of defence. The second line establishes enterprise-wide risk management policies, infrastructure, processes, methodologies and practices that the first and second lines use to identify, assess, manage (which includes mitigation), monitor and report risks across the enterprise.
- Corporate Audit Division is the third line of defence. It provides an independent assessment of the effectiveness of internal controls across the enterprise, including controls that support the risk management and governance processes.

## Risk Taxonomy

We maintain a Risk Taxonomy that documents the key risks to which BMO is exposed and provides foundational support across the risk management life cycle in relation to each of the key risks. Our Risk Taxonomy incorporates exposures to financial risks (Credit and Counterparty Risk, Market Risk, Insurance Risk and Liquidity and Funding Risk), non-financial risks (Operational Non-Financial Risk and Legal and Regulatory Risk) and transverse risks, which intersect with both financial and non-financial risks (Strategic Risk, Environmental and Social Risk and Reputation Risk). We maintain sub-categories under each Tier 1 risk in order to support effective risk management practices as part of the overall ERMF. Any failure in managing these risks, or in controlling our exposures to them, could have financial consequences for BMO.

## Risk Management Life Cycle

**Risk Identification, Assessment and Management**
Risk identification is an integral step in recognizing the key inherent risks that BMO faces, assessing the potential for loss and then acting to mitigate this potential. Our Risk Taxonomy documents the key risks, supporting the implementation of our Risk Appetite Framework and assisting in identifying the primary risk categories for which stress capital consumption is estimated. Risk review and approval processes are established based on the nature, size and complexity of the risks involved. Generally, these involve a formal review and approval by either an individual or a committee that is independent of the originator. Delegated authorities and approvals by category are outlined below.

- **Portfolio transactions** – transactions are approved through risk assessment processes for all types of transactions at all levels of the enterprise, which include operating group recommendations and ERPM approval of credit risk, and transactional and position limits for market risk.
- **Structured transactions** – new structured products and transactions with significant legal and regulatory, accounting or tax implications are reviewed by the Global Markets Risk Committee, as appropriate, and are also assessed under the operational risk management process if they involve structural or operational complexity that may give rise to significant operational risk. Transactions that may give rise to reputation risk are reviewed by the Reputation Risk Management Committee.
- **Investment initiatives** – documentation of risk assessments is formalized through the investment spending approval process, and is reviewed and approved by Corporate Services based on the size of an initiative's investment spending and its inherent risk.
- **New products and services** – policies and procedures for the approval of new or modified products and services offered to customers are the responsibility of the first line of defence, including appropriate senior business leaders, and are reviewed and approved by subject matter experts and senior managers in Corporate Services, as well as by other senior management committees.



## Risk Monitoring and Reporting

**Risk-Based Capital Assessment**
Two measures of risk-based capital are used by BMO: economic capital and advanced-approach regulatory capital. Both are aggregate measures of the risk that the bank assumes in pursuit of its financial objectives, and enable the evaluation of returns on a risk-adjusted basis. Our operating model provides for the direct management of each type of risk, as well as the management of material risks on an integrated basis. Measuring the economic profitability of transactions or portfolios involves a combination of both expected and unexpected losses to assess the extent and correlation of risk before authorizing new exposures. Both expected and unexpected loss measures for a current transaction or portfolio reflect current market conditions, the inherent risk in the position and, as appropriate, its credit quality. Risk-based capital methods and material models are reviewed at least annually and updated, as appropriate. The risk-based capital models provide a forward-looking estimate of the difference between the maximum potential loss in economic (or market) value and expected loss, measured over a specified time interval and using a defined confidence level.

**Stress Testing**
Stress testing is a key element of our risk management and capital management frameworks. It is integrated into our enterprise and group risk appetite statements and embedded in our management processes. To evaluate risks, we regularly test a range of scenarios, which vary in frequency, severity and complexity, in portfolios and businesses across the enterprise. In addition, we participate in regulatory stress tests in multiple jurisdictions. Governance of the stress testing framework resides with senior management, including the Enterprise Stress Testing Committee. This committee comprises business, risk and finance executives, and is accountable for reviewing and challenging enterprise-wide scenarios and stress test results. Stress testing and enterprise-wide scenarios associated with the Internal Capital Adequacy Assessment Process (ICAAP), including recommendations for actions that the enterprise could take in order to manage the impact of a stress event, are established by senior management and presented to the Board of Directors. Oversight and governance of the stress testing associated with the Horizontal Capital Review (HCR), which is a U.S. regulatory requirement for BMO Financial Corp. (BFC), are exercised at the BFC level by its Board of Directors.

Quantitative models and tools, along with qualitative evaluations, are utilized to assess the impact of changes in the macroeconomic environment on the income statement and balance sheet and the resilience of the bank's capital position over a forecast horizon. Models utilized for stress testing are approved and governed under the Model Risk Management Framework, and are used to establish a better understanding of our risks and to test our capital adequacy.

**Enterprise Stress Testing**
Enterprise stress testing supports BMO's ICAAP and target-setting through analysis of the potential effects of low-frequency, high-severity events on our earnings, our balance sheet, and our liquidity and capital positions. Scenario selection is a multi-step process that considers material and idiosyncratic risks and the potential impact of new or emerging trends on risk profiles, as well as the macroeconomic environment. Scenarios may be defined by senior management or regulators. The economic impacts are determined by the Economics group, which distills the scenarios into macroeconomic and market variables that include, but are not limited to, GDP growth, yield curve estimates, unemployment rates, real estate prices, stock index growth and changes in corporate profits. These macroeconomic variables drive stress loss models, tools and qualitative assessments that are applied to determine estimated stress impacts. The scenarios are used by operating, risk and finance groups to assess a broad range of financial impacts that BMO could experience as a result of a specific stress, as well as the ordinary course of business and extraordinary actions anticipated in response to that stress.

Stress test results, including mitigating actions, are benchmarked and challenged by the relevant business units and senior management, including the Enterprise Stress Testing Committee.

### Targeted Portfolio and Ad Hoc Stress Testing

BMO's stress testing framework integrates stress testing at the line of business, portfolio, industry, geographic and product level, and embeds the test results in strategy, business planning and decision-making. Targeted portfolio, industry and geographic analysis is conducted by ERPM and the lines of business to test risk appetite, limits, concentration and strategy. Ad hoc stress testing is conducted in response to changing economic or market conditions and in order to assess business strategies.

Refer to the Environmental and Social Risk section for a discussion of our climate scenario analysis program.

## Risk Culture

The Enterprise Culture and Conduct Framework sets out BMO's approach to managing and mitigating potential misconduct. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Similar to BMO's approach to managing other non-financial risks, this framework is supported by the ERMF and our focus on maintaining a strong risk culture. BMO reports on various metrics related to culture and conduct, and engages with other control frameworks across the enterprise and in all of the jurisdictions in which it operates.

Risk culture at BMO is the set of shared norms, attitudes and behaviours related to risk awareness, risk-taking and risk management. Sound risk culture consistently supports appropriate behaviours and judgments about risk-taking, and promotes effective risk management and the alignment of risk-taking activities with BMO's Risk Appetite. Our risk culture informs and supports our overall culture. We have a long-standing commitment to high ethical standards, grounded in our values of integrity, empathy, diversity and responsibility. Our Purpose – to Boldly Grow the Good *in business and life* defines BMO as an organization and is the foundation of our operations. ERPM is responsible for the development and promotion of a healthy, strong risk culture across the enterprise. In pursuing this mandate, ERPM works closely with Legal & Regulatory Compliance and its Ethics & Conduct Office, as well as People & Culture. BMO's risk culture is founded on four guiding principles that together reinforce its effectiveness across the bank: Tone from the Top, Accountability, Effective Communication and Challenge, and Incentives:

- **Tone from the Top:** Our risk culture is grounded in an approach to risk management that encourages openness, constructive challenge and personal accountability. Each member of senior management plays a critical role in fostering this strong risk culture among all employees by effectively communicating this responsibility and by the example of their actions. The Board of Directors oversees BMO's corporate objectives, and seeks to ensure they are supported by a sound risk strategy and an effective ERMF that is appropriate to the nature, scale, complexity and risk profile of our operations.
- **Accountability:** BMO's ERMF is anchored in the three-lines-of-defence approach to managing risk. Our risk culture also encourages the escalation of concerns associated with potential or emerging risks to senior management, so that they can be appropriately evaluated and addressed. BMO encourages and supports an environment in which concerns can be raised without retaliation.
- **Effective Communication and Challenge:** Timely and transparent sharing of information is integral to engaging stakeholders in key decisions and strategy discussions, which brings added rigour and discipline to BMO's decision-making. This not only leads to the timely identification, escalation and resolution of issues, but also encourages open communication, independent challenge and an understanding of the key risks faced by the organization, so that employees are equipped and empowered to make decisions and take action in a coordinated and consistent manner, supported by a strong and effective monitoring and control framework.
- **Incentives:** Compensation and other incentives are aligned with prudent risk-taking. These are designed to reward the appropriate use of capital and respect for the rules and principles of the ERMF, and to discourage excessive risk-taking. Risk managers have input into the design of incentive programs that may have an effect on risk-taking. We also maintain training programs that are designed to foster a deep understanding of BMO's capital management and risk management frameworks across the enterprise, providing employees and management with the tools and insights they need to fulfill their responsibilities for independent oversight, regardless of their role in the organization.

# Credit and Counterparty Risk

**Credit and counterparty risk** is the potential for credit loss due to the failure of an obligor (i.e., a borrower, endorser, guarantor or counterparty) to repay a loan or honour another predetermined financial obligation.

Credit and counterparty risk underlies every lending activity that we enter into, and also arises in the holding of investment securities, transactions related to trading and other capital markets products, and activities related to securitization. Credit risk and counterparty risk represent the most significant measurable risk we face. Proper management of credit risk is integral to our success, since failure to effectively manage credit risk could have an immediate and significant impact on our earnings, financial condition and reputation.

## Credit and Counterparty Risk Governance

The Credit Risk Management Framework seeks to ensure that all material credit risks to which the enterprise is exposed are identified, assessed, managed, monitored, and reported. The Risk Review Committee (RRC) has oversight of the management of all material risks that we face at BMO, including the Credit Risk Management Framework. The framework incorporates governing principles that are defined in a series of corporate policies and standards and are applied through specific operating procedures. These policies and standards are reviewed on a regular basis and modified as necessary, so that they are current and consistent with our risk appetite. The structure, limits (both notional and capital-based), collateral requirements, monitoring, reporting and ongoing management of credit exposures are all governed by these credit risk management principles.

Lending officers in the operating groups are responsible for recommending credit decisions based on the completion of appropriate due diligence, and they assume accountability for the related risks. In some instances, relatively small transactions may be assessed by an automated decision-making process, or they may be approved by first-line underwriters with appropriate training, independence and oversight. Credit officers in Enterprise Risk Portfolio Management (ERPM) approve larger transactions or transactions involving greater risk and are accountable for providing an objective independent assessment of the relevant lending recommendations and risks assumed by the lending officers. All of these individuals in the first and second lines of defence are subject to a lending qualification process and operate in a disciplined environment with clear delegation of decision-making authority, including individually delegated lending limits where appropriate, which are reviewed annually or more frequently, as needed. The Board of Directors annually delegates to the CEO discretionary lending limits for further specific delegation to senior officers. Credit decision-making is conducted at the management level appropriate to the size and risk of each transaction, in accordance with an extensive range of corporate policies, standards and procedures governing the conduct of activities in which credit risk arises. Corporate Audit Division reviews and tests management processes and controls and samples credit transactions in order to assess adherence to acceptable lending standards as set out in BMO's Risk Appetite Statement, as well as compliance with all applicable corporate policies, standards and procedures.

For corporate and commercial borrowers presenting a higher than normal risk of default, we have in place formal policies that outline the framework for managing such accounts and specialized groups that manage them. We strive to identify borrowers facing financial difficulty early, and every effort is made to bring such accounts back to an acceptable level of risk through the exercise of good business judgment and the implementation of sound and constructive workout solutions. Borrowers are managed on a case-by-case basis, which involves the application of judgment by the specialized groups.

All credit risk exposures are subject to regular monitoring. Performing corporate and commercial accounts are reviewed on a regular basis, no less frequently than annually, with most subject to internal monitoring of triggers that, if breached, result in an interim review. The frequency of review increases in accordance with the likelihood and size of potential credit losses, and deteriorating higher-risk situations are referred to specialized account management groups for closer attention, as appropriate. In addition, regular portfolio and sector reviews are conducted, including stress testing and scenario analysis based on current, emerging or prospective risks. Reporting is provided at least quarterly, and more frequently where appropriate, to the Board and senior management committees in order to keep them informed of credit risk developments in our portfolios, including changes in credit risk concentrations, watchlist accounts, impaired loans, provisions for credit losses, negative credit migration and significant emerging credit risk issues. This supports RRC and senior management committees in any related decisions they may make.

Counterparty credit risk (CCR) involves a bilateral risk of loss because the market value of a transaction can be positive or negative for either counterparty. CCR exposures are subject to the credit oversight, limit framework and approval process outlined above. However, given the nature of the risk, CCR exposures are also monitored under the market risk framework. In order to reduce our exposure to CCR, transactions are often collateralized, and trades may be cleared through a regulated central counterparty (CCP), which reduces overall systemic risk by standing between counterparties, maximizing netting across trades and insulating counterparties from each other's defaults. CCPs mitigate the risk of default by any member through margin requirements (both initial and variation) and a default management process, including a default fund and other provisions. Our exposures to CCPs are subject to the same credit risk governance, monitoring and rating framework we apply to all other corporate accounts.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

## Credit and Counterparty Risk Management

### Collateral Management

Collateral is used for credit risk mitigation purposes in order to minimize losses that would otherwise be incurred in the event of a default. Depending on the type of borrower or counterparty, the assets available and the structure and term of the credit obligations, collateral can take various forms. For corporate and commercial borrowers, collateral can take the form of pledges of the assets of a business, such as accounts receivable, inventory, machinery or real estate, or personal assets pledged in support of guarantees. For trading counterparties, BMO may enter into legally enforceable netting agreements for on-balance sheet credit exposures, when possible. In the securities financing transaction business (including repurchase agreements and securities lending), we obtain eligible financial collateral that we control and can readily liquidate.

Collateral for BMO's derivatives trading counterparty exposures primarily comprises cash and eligible liquid securities that are monitored and revalued on a daily basis. Collateral is obtained under the contractual terms of standardized industry documentation.

With limited exceptions, we utilize the Master Agreement provided by International Swaps and Derivatives Association Inc., frequently with a Credit Support Annex, to document our collateralized trading relationships with counterparties for over-the-counter (OTC) derivatives that are not centrally cleared.

A Credit Support Annex entitles a party to demand a transfer of collateral (or other credit support) when its exposure to OTC derivatives of the other party exceeds an agreed threshold. Collateral to be transferred can include variation margin or initial and variation margin. Credit Support Annexes contain, among other measures, certain thresholds and provisions setting out acceptable types of collateral, a method for their valuation (discounts are often applied to market values), whether or not the collateral can be re-pledged by the recipient and how interest is to be calculated.

Many G20 jurisdictions continue to implement new regulations that require certain counterparties with significant exposures to OTC derivatives to post or collect prescribed types and amounts of collateral for uncleared OTC derivatives transactions. For additional discussion, refer to the Derivative Transactions section.

To document our contractual securities financing relationships with counterparties, we utilize master repurchase agreements for repurchase transactions, and master securities lending agreements for securities lending transactions.

On a periodic basis, collateral is subject to revaluation based on the specific asset type. For loans, the value of collateral is initially established at the time of origination, and the frequency of revaluation is dependent on the type of collateral. For commercial real estate collateral, a full external appraisal of the property is typically obtained at the time of loan origination, unless the exposure is below a specified threshold amount, in which case an internal evaluation and a site inspection are conducted. Internal evaluations may consider property tax assessments, purchase prices, real estate listings or realtor opinions. The case for an updated appraisal is reviewed annually, with consideration given to the borrower risk rating, existing tenants and lease contracts, as well as current market conditions.

In the event a loan is classified as impaired, and depending on its size, a current external appraisal, valuation or restricted use appraisal is obtained and updated every 12 months, as long as the loan remains classified as impaired. In Canada, for residential real estate that has a loan-to-value (LTV) ratio of less than 80%, an independent property valuation is routinely obtained at the time of loan origination. For U.S. residential loans secured by real estate, an independent property valuation is obtained for all loans that will be retained in BMO's loan portfolio. For certain real estate loans originated for sale to government-sponsored agencies, the requirement may be waived based on an existing valuation already on file with that agency.

We may use an external service provided by Canada Mortgage and Housing Corporation or an automated valuation model from a third-party appraisal management provider to assist in determining either the current value of a property or the need for a full property appraisal.

For insured residential mortgages in Canada with an LTV ratio greater than 80%, the default insurer is responsible for confirming the current value of the property.

### Portfolio Management and Concentrations of Credit and Counterparty Risk

Our credit risk governance policies require an acceptable level of diversification to help ensure we avoid undue concentrations of credit risk. Concentrations of credit risk may exist when a relatively large number of clients are engaged in similar activities, are located in the same geographic region or have similar economic characteristics such that their ability to meet contractual obligations could be similarly affected by changes in economic, political or other conditions. Limits may be specified for several portfolio dimensions, including industry, specialty segment (e.g., commercial real estate), country, product and single-name concentrations. We use a range of tools to reduce the credit risk exposures in our loan portfolio. These include asset sales, traditional securitizations, or the purchase of credit protection in the form of credit default swaps or credit insurance and risk transfer transactions. Credit risk is mitigated by obtaining protection from better-rated counterparties or high-quality collateral. Credit risk mitigation activities support our management of capital, and individual and portfolio credit concentration.

Our credit assets consist of a well-diversified portfolio representing millions of clients, the majority of them individual consumers and small to medium-sized businesses. On a drawn loans and commitments basis, our most significant exposure as at October 31, 2022 was to individual consumers, comprising $308,446 million ($280,087 million in 2021).

### Wrong-Way Risk

Wrong-way risk occurs when our exposure to a counterparty or the magnitude of our potential loss is highly correlated with the counterparty's probability of default. Specific wrong-way risk arises when the credit quality of the counterparty and the market risk factors affecting collateral or other risk mitigants display a high correlation, and general wrong-way risk arises when the credit quality of the counterparty, for non-specific reasons, is highly correlated with macroeconomic or other factors that affect the value of the risk mitigant. Our procedures require that specific wrong-way risk be identified in transactions and accounted for in the assessment of risk, including any heightened level of exposure.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

## Credit and Counterparty Risk Measurement

BMO quantifies credit risk at both the individual borrower or counterparty level and the portfolio level. In order to limit earnings volatility, manage expected credit losses and minimize unexpected losses, credit risk is assessed and measured using the following risk-based parameters:

- **Exposure at Default (EAD)** represents an estimate of the outstanding amount of a credit exposure at the time a default may occur.
- **Loss Given Default (LGD)** is a measure of BMO's economic loss, such as the amount that may not be recovered in the event of a default, presented as a proportion of the exposure at default.
- **Probability of Default (PD)** represents the likelihood that a borrower or counterparty will go into default over a one-year time horizon.
- **Expected Loss (EL)** is a measure of BMO's loss that is expected to occur in the normal course of business in a given period of time. EL is calculated as a function of EAD, LGD and PD.

Under Basel III, the Office of the Superintendent of Financial Institutions (OSFI) permits three approaches for the measurement of credit risk: Standardized, Foundation Internal Ratings Based and Advanced Internal Ratings Based (AIRB). BMO primarily uses the AIRB Approach to determine credit risk-weighted assets (RWA) in its portfolios, including portfolios of the bank's subsidiary BMO Financial Corp. Refer to the Supplementary Regulatory Capital Information disclosure for details regarding the total EAD of Retail and Wholesale exposures under AIRB capital treatment. The remaining exposures reflect waivers and exemptions to the AIRB Approach and are measured under the Standardized Approach, subject to OSFI's approval. We continue to transition all material exposures in this category to the AIRB Approach. For securitization exposures, we apply the Basel hierarchy of approaches, including the Securitization Internal Ratings Based Approach and the External Ratings Based Approach, as well as the Standardized Approach.

BMO's regulatory capital and economic capital frameworks both use EAD to assess credit and counterparty risk. Exposures are classified as follows:

- Drawn exposures include loans, acceptances, deposits with regulated financial institutions and certain securities. For off-balance sheet amounts and undrawn amounts, EAD includes an estimate of any further amounts that may be drawn at the time of default.
- Undrawn commitments cover all unutilized authorizations associated with the drawn loans noted above, including any authorizations that are unconditionally cancellable. EAD for undrawn commitments is model-generated, based on internal empirical data.
- OTC derivatives are those in proprietary accounts that result in exposure to credit risk in addition to market risk. EAD for OTC derivatives is calculated inclusive of collateral.
- Other off-balance sheet exposures include items such as guarantees, standby letters of credit and documentary credits. EAD for other off-balance sheet items is based on management's best estimate.
- Repo-style transactions include repos, reverse repos and securities lending transactions, which represent both asset and liability exposures. EAD for repo-style transactions is the calculated exposure, net of collateral.

Capital is calculated based on exposures that, where applicable, have been redistributed to a more favourable PD band or LGD measure, or a different Basel asset class, as a result of the application of credit risk mitigation and a consideration of credit risk mitigants, including collateral and netting.

Total credit exposures at default by type and industry sector, as at October 31, 2022 and 2021, based on the Basel III classifications, are as follows:

| (Canadian $ in millions) | Drawn (3) | | Commitments (undrawn) (3) | | OTC derivatives (4) | | Other off-balance sheet items (3) | | Repo-style transactions (4) (5) | | Total (1) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| Individual | **245,673** | 224,348 | **62,697** | 55,655 | **–** | – | **76** | 84 | **–** | – | **308,446** | 280,087 |
| Financial institutions | **175,770** | 187,011 | **22,535** | 26,933 | **19,030** | 16,331 | **7,887** | 6,808 | **24,311** | 28,968 | **249,533** | 266,051 |
| Governments | **99,498** | 67,207 | **1,863** | 1,606 | **5,500** | 4,011 | **434** | 400 | **3,173** | 3,226 | **110,468** | 76,450 |
| Manufacturing | **36,274** | 27,002 | **20,237** | 16,470 | **1,643** | 1,649 | **2,067** | 1,784 | **–** | – | **60,221** | 46,905 |
| Real estate | **53,531** | 43,524 | **13,325** | 9,830 | **459** | 1,032 | **1,295** | 1,189 | **–** | – | **68,610** | 55,575 |
| Retail trade | **24,040** | 16,270 | **5,235** | 4,646 | **248** | 289 | **548** | 592 | **–** | – | **30,071** | 21,797 |
| Service industries | **54,750** | 44,367 | **18,603** | 16,126 | **695** | 1,238 | **3,169** | 2,998 | **–** | – | **77,217** | 64,729 |
| Wholesale trade | **20,220** | 14,372 | **7,859** | 5,199 | **336** | 282 | **773** | 694 | **–** | – | **29,188** | 20,547 |
| Oil and gas | **4,084** | 6,075 | **4,967** | 5,468 | **6,066** | 10,281 | **1,341** | 1,377 | **–** | – | **16,458** | 23,201 |
| Utilities | **9,954** | 7,412 | **13,740** | 10,864 | **2,087** | 1,273 | **4,364** | 2,950 | **–** | – | **30,145** | 22,499 |
| Others (2) | **48,441** | 37,071 | **17,548** | 17,177 | **1,649** | 1,588 | **5,248** | 4,732 | **–** | – | **72,886** | 60,568 |
| Total exposure at default (6) | **772,235** | 674,659 | **188,609** | 169,974 | **37,713** | 37,974 | **27,202** | 23,608 | **27,484** | 32,194 | **1,053,243** | 938,409 |

(1) Credit exposure excluding equity, securitization and other assets, such as non-significant investments, goodwill, deferred tax assets and intangibles.
(2) Includes remaining industries that individually comprise less than 2% of total exposures.
(3) Represents gross credit exposures without accounting for collateral.
(4) Credit exposure at default is inclusive of collateral.
(5) Impact of collateral on the credit exposure for repo-style transactions is $215,806 million ($208,635 million in 2021).
(6) Excludes exposures arising from derivative and repo-style transactions that are cleared through CCPs totalling $13,698 million ($18,440 million in 2021).

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

## Risk Rating Systems

BMO's risk rating systems are designed to assess and measure the risk of any exposure.

Credit risk-based parameters are monitored, reviewed and validated regularly. Monitoring is on a quarterly basis for both the wholesale and retail models. Refer to the Model Risk section for a discussion of model risk mitigation processes.

### Retail (Consumer and Small Business)

The retail portfolios comprise a diversified group of individual customer accounts and include residential mortgages, personal loans, credit cards, auto loans and small business loans. These loans are managed in pools of homogeneous risk exposures for risk rating purposes. Decision support systems are developed using established statistical techniques and expert systems for underwriting and monitoring purposes. Adjudication models, behavioural scorecards, decision trees and expert knowledge are combined to generate optimal credit decisions in a centralized and automated environment.

The retail risk rating system assesses risk based on individual loan characteristics. We have a range of internally developed PD, LGD and EAD models for each of the major retail portfolios. The major product lines within each of the retail portfolios are modelled separately, so that the risk-based parameters capture the distinct nature of each product. The models, in general, are based on internal historical data recorded over a multi-year period that includes at least one full economic cycle, in compliance with regulatory requirements. Adjustments are incorporated into the parameters, as appropriate, to account for uncertainties. The retail parameters are tested and calibrated on an annual basis, if required, to incorporate additional data points and recent experience in the parameter estimation process. Risk drivers used in the retail credit models may include customer attributes such as delinquency status and credit scores, and account attributes such as loan amount and utilization.

A PD estimate is assigned to each homogeneous pool to reflect the long-run average of one-year default rates over the economic cycle.

An LGD estimate is calculated by discounting future recovery payments to the time of default, including collection costs.

An EAD estimate is calculated as the balance at default divided by the credit limit at the beginning of the year. For non-revolving products, such as mortgages, EAD is equal to 100% of the current outstanding balance and has no undrawn component.

For capital purposes, the LGD and EAD estimates are calibrated to reflect downturn conditions. The PD, LGD and EAD estimates are updated annually and recalibrated as required by comparing the estimates to observed historical experience.

### Retail Credit Probability of Default Bands by Risk Rating

| Risk profile | Probability of default band |
|---|---|
| Exceptionally low | ≤ 0.05% |
| Very low | > 0.05% to 0.20% |
| Low | > 0.20% to 0.75% |
| Medium | > 0.75% to 7.00% |
| High | > 7.00% to 99.99% |
| Default | 100% |

### Wholesale (Sovereign, Bank, Corporate and Commercial)

Within our wholesale portfolios, an enterprise-wide risk rating framework is applied to all sovereign, bank, corporate and commercial counterparties. One key element of this framework is the assignment of appropriate borrower or counterparty risk ratings (BRRs). We have a range of internally designed general and sector-specific BRR models, as well as portfolio-level LGD and EAD models for each of the sovereign, bank, corporate and commercial portfolios.

The BRR models capture the key financial and non-financial characteristics of the borrowers and generate a borrower-level rating that reflects the rank order of the default risk. The models are primarily based on internal data, supplemented by judgment as necessary, for low-default portfolios.

BRRs are assessed and assigned at the time of loan origination, and reassessed when borrowers request changes to credit facilities or events trigger a review, such as an external rating change or covenant breach. BRRs are reviewed no less frequently than annually, and more frequent reviews are conducted for borrowers with less acceptable risk ratings. The assigned ratings are mapped to a PD reflecting the likelihood of default over a one-year time horizon. As a borrower migrates between risk ratings, the PD associated with the borrower also changes.

We employ a master scale with 14 BRRs above default, and PDs are assigned to each rating within an asset class to reflect the long-run average of one-year default rates over the economic cycle, supplemented by external benchmarking, as necessary.

An LGD estimate captures the priority of claim, collateral, product and sector characteristics of the credit facility extended to a borrower. LGD estimates are at the facility level.

An EAD estimate captures the facility type, sector and utilization rate characteristics of the credit facility extended to a borrower. EAD estimates are at the facility level. An EAD credit conversion factor is calculated for eligible facilities by comparing amounts drawn at the time of default and one year prior to default. The authorization and the amount drawn, one year prior to default, are used to split each facility into its respective drawn and undrawn portion, where applicable.

LGD and EAD models have been developed for each asset class using internal data recorded over a multi-year period that includes at least one full economic cycle, in compliance with regulatory requirements. Results are benchmarked using external data when necessary and adjustments are incorporated into the parameters, as appropriate, to account for uncertainties. For capital purposes, the LGD and EAD parameters are calibrated to reflect downturn conditions. The PD, LGD and EAD estimates are updated annually and recalibrated as required by comparing the estimates to observed historical experience.

As demonstrated in the table below, our internal risk rating system can be aligned with those of external rating agencies.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

### Wholesale Borrower Risk Rating Scale

| BMO rating | Moody's Investors Service implied equivalent | Standard & Poor's implied equivalent |
|---|---|---|
| **Acceptable** | | |
| I-1 to I-7 | Aaa to Baa3 | AAA to BBB- |
| S-1 to S-4 | Ba1 to B1 | BB+ to B+ |
| **Watchlist** | | |
| P-1 to P-3 | B2 to Ca | B to CC |
| **Default / Impaired** | | |
| D-1 to D-4 | C | C to D |

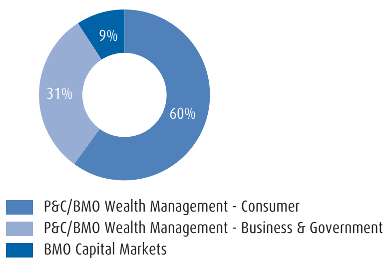
## Credit Quality Information

### Portfolio Review

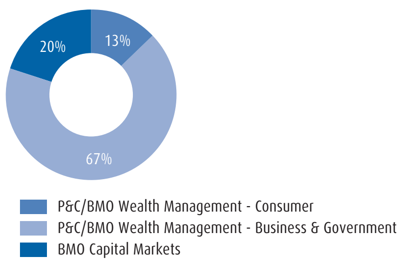
Total enterprise-wide outstanding credit risk exposures were $1,053.2 billion as at October 31, 2022, with $550.5 billion recorded in Canada, $456.1 billion in the United States and $46.6 billion in other jurisdictions. This represented an increase of $114.8 billion or 12% from the prior year.

BMO's loan book continues to be well-diversified by industry and geographic region. Gross loans and acceptances increased $92.3 billion or 19% from the prior year to $567.2 billion as at October 31, 2022. The geographic mix of BMO's Canadian and U.S. portfolios represented 62.6% and 35.4% of total loans, respectively, compared with 66.0% and 32.4% in the prior year. The loan portfolio is well-diversified, with the consumer loan portfolio representing 43.1% of the total portfolio, a decrease from 46.5% in the prior year, and business and government loans representing 56.9% of the total portfolio, an increase from 53.5% in the prior year.

**Canada and Other Countries**




**U.S.**




### Real Estate Secured Lending

Residential mortgage and home equity line of credit (HELOC) exposures continue to be of interest in the current environment. We regularly perform stress testing on our residential mortgage and HELOC portfolios to evaluate the potential effects of high-impact events. These stress tests incorporate scenarios ranging from moderately to severely adverse. The credit losses forecast in these tests vary with the severity of the scenario and are currently considered to be manageable.

### Leveraged Finance

We define leveraged finance loans as loans and mezzanine financing provided to private equity-owned businesses for which our assessment indicates a higher level of credit risk. We have some exposure to leveraged finance loans, which represented 2% of total assets, with $25.1 billion outstanding as at October 31, 2022 (2% and $19.0 billion, respectively, in 2021). Of this amount, 25% of leveraged finance loans, with $6.3 billion outstanding as at October 31, 2022 (27% and $5.2 billion, respectively, in 2021), were well-secured by high-quality assets. The remainder of the portfolio is closely managed, and in some cases, has risk mitigation and structural elements that lower the level of credit risk. In addition, $348 million or 1% of all leveraged finance loans were classified as impaired as at October 31, 2022 ($417 million or 2% in 2021).

### Provision for Credit Losses

Total provision for credit losses was $313 million, compared with $20 million in the prior year, reflecting a deteriorating economic outlook and less favourable credit conditions. Detailed discussions of PCL, including historical PCL trends, are provided in Table 12 in the Supplemental Information and in Note 4 of the consolidated financial statements.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

### Gross Impaired Loans

Total gross impaired loans and acceptances (GIL) were $1,991 million, a decrease of 8% from $2,169 million in the prior year. The largest decreases in impaired loans were recorded in the oil and gas, and retail trade industries. GIL as a percentage of gross loans and acceptances was 0.35% in 2022, compared with 0.46% in the prior year.

Factors contributing to the change in GIL are outlined in the table below. Loans classified as impaired during the year decreased to $1,635 million from $1,775 million in 2021, reflecting lower impaired loan formations in the oil and gas, manufacturing and retail trade industries. On a geographic basis, Canada accounted for most impaired loan formations, comprising 71% of total formations in 2022, compared with 75% in 2021.

Detailed breakdowns of impaired loans by geographic region and industry can be found in Table 8 in the Supplemental Information and in Note 4 of the consolidated financial statements.

### Changes in Gross Impaired Loans (1) and Acceptances

| (Canadian $ in millions, except as noted)<br>For the year ended October 31 | **2022** | 2021 |
|---|---|---|
| **GIL, beginning of year** | **2,169** | 3,638 |
| Classified as impaired during the year | **1,635** | 1,775 |
| Transferred to not impaired during the year | **(659)** | (821) |
| Net repayments | **(819)** | (1,618) |
| Amounts written-off | **(363)** | (584) |
| Recoveries of loans and advances previously written-off | **–** | – |
| Disposals of loans | **(54)** | (79) |
| Foreign exchange and other movements | **82** | (142) |
| **GIL, end of year** | **1,991** | 2,169 |
| GIL as a % of gross loans and acceptances | **0.35** | 0.46 |

(1) GIL excludes purchased credit impaired loans.

### Allowance for Credit Losses

We employ a disciplined approach to provisioning and loan loss evaluation across all loan portfolios, with the prompt identification of problem loans being a key risk management objective. We maintain both an allowance on impaired loans and an allowance on performing loans, in accordance with IFRS. An allowance on performing loans is maintained to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering the guideline issued by our regulator, OSFI. Under the IFRS 9 expected credit loss (ECL) methodology, an allowance is recorded for ECL on financial assets regardless of whether there has been an actual loss event. We recognize a loss allowance at an amount generally based on 12 months of ECL, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). We record ECL over the remaining life of performing financial assets that are considered to have experienced a significant increase in credit risk (Stage 2).

ECL is calculated on a probability-weighted basis, based on three different economic scenarios, and is a function of PD, EAD and LGD estimates calibrated to meet the requirements for calculating ECL for a specific financial asset. The timing of the loss is also considered, and ECL is estimated by incorporating forward-looking economic information and by applying experienced credit judgment to reflect factors not captured in ECL models. An allowance on impaired loans is maintained to reduce the carrying value of individually identified impaired loans (Stage 3) to the expected recoverable amount.

We maintain an allowance for credit losses (ACL) at a level that we consider appropriate to absorb credit-related losses. As at October 31, 2022, the total ACL was $2,998 million, an increase of $40 million from the prior year, reflecting higher allowances on impaired loans, partially offset by a lower allowance on performing loans. The allowance on impaired loans was $557 million as at October 31, 2022, and the allowance on performing loans was $2,441 million. These amounts included an allowance on impaired loans of $13 million and an allowance on performing loans of $368 million related to undrawn commitments and letters of credit that are considered other credit instruments and recorded in other liabilities. The allowance on impaired loans increased $46 million from $511 million in the prior year, and our coverage ratio remained adequate, with ACL on impaired loans as a percentage of GIL of 27.3%, compared with 23.0% in 2021. This ratio can change quarter-over-quarter due to variability in the write-down of loans and the related allowance. The allowance on performing loans decreased $6 million to $2,441 million from $2,447 million in the prior year, primarily driven by reduced uncertainty as a result of the improving pandemic environment and portfolio credit improvement, almost fully offset by a deteriorating economic outlook, movements in foreign exchange rates, balance growth and adoption of a higher adverse scenario weight during the second quarter.

Further details on the continuity in ACL by each product type can be found in Tables 9 and 10 in the Supplemental Information, and in Note 4 of the consolidated financial statements.

## International Exposures

BMO's geographic exposures in regions outside of Canada and the United States are subject to a risk management framework that incorporates assessments of the economic and political risk in each region or country, as well as management of exposures within limits based on product, entity and country of ultimate risk. Our exposure to these regions is set out in the table below.

On October 26, 2021, OSFI recommended that Canadian global systemically important banks (G-SIBs) discontinue country-by-country disclosures of European sovereign exposures and begin to disclose sovereign exposures at the regional (continental) level, effective the first quarter of 2022.

The table outlines total net exposure for funded lending and undrawn commitments, securities (including cash products, traded credit and credit default swap activity), repo-style transactions and derivatives. Repo-style transactions and derivatives exposures are reported at mark-to-market value. Derivatives exposures incorporate transaction netting where master netting agreements with counterparties have been entered into, and collateral offsets for counterparties where a Credit Support Annex is in effect.

## Exposure by Region

| | As at October 31, 2022 | | | | | | | | | | | | | As at October 31, 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (Canadian $ in millions) | Funded lending and commitments | | | | Securities | | | | Repo-style transactions and derivatives | | | | | |
| Region | Bank | Corporate | Sovereign | Total | Bank | Corporate | Sovereign | Total | Bank | Corporate | Sovereign | Total | Total net exposure | Total net exposure |
| Europe (excluding United Kingdom) | **416** | **2,742** | **–** | **3,158** | **728** | **44** | **6,718** | **7,490** | **267** | **718** | **184** | **1,169** | **11,817** | 12,477 |
| United Kingdom | **60** | **4,914** | **–** | **4,974** | **77** | **108** | **377** | **562** | **516** | **1,011** | **32** | **1,559** | **7,095** | 8,236 |
| Latin America | **3,150** | **5,970** | **–** | **9,120** | **–** | **31** | **–** | **31** | **13** | **107** | **14** | **134** | **9,285** | 5,846 |
| Asia-Pacific | **4,763** | **3,081** | **54** | **7,898** | **1,400** | **213** | **3,272** | **4,885** | **162** | **719** | **42** | **923** | **13,706** | 11,766 |
| Africa and Middle East | **1,500** | **318** | **–** | **1,818** | **6** | **5** | **33** | **44** | **7** | **2** | **432** | **441** | **2,303** | 2,923 |
| Other (1) | **–** | **5** | **32** | **37** | **33** | **–** | **3,947** | **3,980** | **–** | **–** | **1,885** | **1,885** | **5,902** | 4,775 |
| Total | **9,889** | **17,030** | **86** | **27,005** | **2,244** | **401** | **14,347** | **16,992** | **965** | **2,557** | **2,589** | **6,111** | **50,108** | 46,023 |

(1) Primarily exposure to supranational entities.

## Derivative Transactions

The following table presents the notional amounts of BMO's over-the-counter (OTC) derivative contracts, comprising contracts that are centrally cleared and settled through a designated clearing house or central counterparty (CCP) and contracts that are not centrally cleared.

CCPs are established under the supervision of central banks or other similar regulatory authorities and, as financial market infrastructure, must satisfy certain financial resilience requirements. Generally speaking, in order to centrally clear OTC contracts, we acquire a membership in the CCP and, in addition to providing collateral to protect the CCP against risk related to BMO, we are exposed to risk as a member for our contribution to a default fund. We may also be called on to make additional contributions or provide other support in the event of default by another member.

The notional amounts of our derivatives represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under each contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in the Consolidated Balance Sheet. The fair values of OTC derivative contracts are recorded in the Consolidated Balance Sheet.

### Over-the-Counter Derivative Contracts (Notional amounts)

| (Canadian $ in millions) | Non-centrally cleared | | Centrally cleared | | Total | |
|---|---|---|---|---|---|---|
| As at October 31 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| **Interest Rate Contracts** | | | | | | |
| Swaps | **420,700** | 379,117 | **5,534,061** | 3,772,174 | **5,954,761** | 4,151,291 |
| Forward rate agreements | **3,929** | 2,919 | **18,468** | 144,738 | **22,397** | 147,657 |
| Purchased options | **98,113** | 69,491 | **–** | – | **98,113** | 69,491 |
| Written options | **87,941** | 68,155 | **–** | – | **87,941** | 68,155 |
| Total interest rate contracts | **610,683** | 519,682 | **5,552,529** | 3,916,912 | **6,163,212** | 4,436,594 |
| **Foreign Exchange Contracts** | | | | | | |
| Cross-currency swaps | **119,976** | 85,912 | **–** | – | **119,976** | 85,912 |
| Cross-currency interest rate swaps | **582,092** | 513,421 | **–** | – | **582,092** | 513,421 |
| Forward foreign exchange contracts | **469,503** | 441,107 | **12,270** | 48,319 | **481,773** | 489,426 |
| Purchased options | **72,733** | 54,051 | **–** | 94 | **72,733** | 54,145 |
| Written options | **74,041** | 54,045 | **–** | 102 | **74,041** | 54,147 |
| Total foreign exchange contracts | **1,318,345** | 1,148,536 | **12,270** | 48,515 | **1,330,615** | 1,197,051 |
| **Commodity Contracts** | | | | | | |
| Swaps | **24,487** | 28,892 | **38** | – | **24,525** | 28,892 |
| Purchased options | **5,686** | 4,526 | **–** | – | **5,686** | 4,526 |
| Written options | **5,011** | 3,132 | **–** | – | **5,011** | 3,132 |
| Total commodity contracts | **35,184** | 36,550 | **38** | – | **35,222** | 36,550 |
| **Equity Contracts** | **105,280** | 99,471 | – | 7 | **105,280** | 99,478 |
| **Credit Default Swaps** | | | | | | |
| Purchased | **1,496** | 778 | **15,275** | 11,580 | **16,771** | 12,358 |
| Written | **962** | 179 | **10,137** | 4,979 | **11,099** | 5,158 |
| Total credit default swaps | **2,458** | 957 | **25,412** | 16,559 | **27,870** | 17,516 |
| Total | **2,071,950** | 1,805,196 | **5,590,249** | 3,981,993 | **7,662,199** | 5,787,189 |

MD&A

# Market Risk

**Market risk** is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, and credit spreads, and includes the risk of credit migration and default in our trading book.

Market risk arises from our trading and underwriting activities, as well as our structural banking activities. The magnitude and importance of these activities to the enterprise, along with the potential volatility of market variables, call for diligent governance and a robust market risk management framework that seeks to provide effective identification, measurement, reporting and control of market risk exposures.

## Trading and Underwriting Market Risk Governance

Our market risk-taking activities are subject to an extensive governance framework. The Risk Review Committee (RRC) exercises oversight of the management of market risk on behalf of the Board of Directors and approves limits governing market risk exposures that are consistent with our risk appetite. The Risk Management Committee (RMC) regularly reviews and discusses significant market risk exposures and positions, and provides ongoing senior management oversight of our risk-taking activities. Both of these committees are kept apprised of specific market risk exposures and other factors that could expose us to unusual, unexpected or unquantified risks associated with market exposures, as well as other current and emerging market risks. In addition, all businesses and individuals authorized to conduct trading and underwriting activities on behalf of BMO are required to work within our governance framework and, as part of their first-line-of-defence responsibilities, they must adhere to all relevant corporate policies, standards and procedures, and maintain and manage market risk exposures within specified limits and risk tolerances. In support of our risk governance framework, our market risk management framework comprises processes, infrastructure and supporting documentation, which together support the identification, assessment, independent monitoring and control of our market risk exposures.

## Trading and Underwriting Market Risk

Our trading and underwriting businesses give rise to market risk associated with buying and selling financial products in the course of meeting our customers' needs, including market-making and related financing activities, and assisting clients to raise funds by way of securities issuance.

### Identification and Assessment of Trading and Underwriting Market Risk

As the first step in the management of market risk, thorough assessment processes are in place to identify market risk exposures associated with both new products and the evolving risk profile of existing products, including on- and off-balance sheet positions, trading and non-trading positions, leveraged loan, bond and equity underwriting, and market risk exposures arising from the domestic and foreign operations of our operating groups.

Various metrics and techniques are then employed to measure identified market risk exposures. These metrics primarily include Value at Risk, Stressed Value at Risk and Incremental Risk Charge, as defined below, as well as stress testing. Other techniques include sensitivity analysis of our trading and underwriting portfolios to market risk factors, and the review of position concentrations, notional values and trading revenues.

**Value at Risk (VaR)** measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period. VaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

**Stressed Value at Risk (SVaR)** measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period, with model inputs calibrated to historical data from a period of significant financial stress. SVaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

**Incremental Risk Charge (IRC)** complements the VaR and SVaR metrics and represents an estimate of the default and migration risks of non-securitization products with exposure to interest rate risk that are held in the trading book, measured over a one-year horizon at a 99.9% confidence level.

Risk models support the measurement of our risk exposure. We use a variety of methods to verify the integrity of our risk models, including the application of back-testing against hypothetical losses and approval by an independent model validation team. This testing is aligned with defined regulatory expectations, and its results confirm the reliability of our models. The data and correlations that underpin our models are updated frequently, so that risk metrics reflect current conditions. Selection of the period of significant financial stress for SVaR incorporates historical events, including the 2008 global financial crisis, the current conflict in Ukraine and the COVID-19 pandemic.

Probabilistic stress testing and scenario analysis are used to determine the potential impact of low-frequency, high-severity events on our portfolios. The scenarios incorporate hypothetical and historical events, and consider the performance of our portfolios under a variety of market conditions. Scenarios are amended, added or removed to refine our risk measurement, and the results are reported to the lines of business, the RMC and the RRC on a regular basis.

VaR, SVaR, IRC and stress testing should not be viewed as definitive predictors of the maximum amount of losses that could occur in any one day, as their results are based on models and estimates and are subject to confidence levels, and the estimates could be exceeded under unforeseen market conditions.

Back-testing processes assume there are no changes in the previous day's closing positions and then isolate the effects of each day's price movements against those closing positions. Our VaR model is back-tested daily, and the one-day 99% confidence level VaR at the local and consolidated BMO levels is compared with the estimated daily profit and loss (P&L) that would be recorded if the portfolio composition remained unchanged. If this P&L result is negative and its absolute value is greater than the previous day's VaR, a back-testing exception occurs. Each exception is investigated, explained and documented.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

Although it is a useful indicator of risk, VaR has limitations, as with any model-driven metric. These include the assumption that all positions can be liquidated within the assumed one-day holding period, which may not be the case under illiquid market conditions. Generally, market liquidity horizons are reviewed for suitability and updated where appropriate for relevant risk metrics. Further limitations of the VaR metric include the assumption that historical data can be used as a proxy to forecast future market events, and that VaR calculations are based on portfolio positions at the close of business and do not reflect the impact of intra-day trading activity.

### Monitoring and Control of Trading and Underwriting Market Risk

Limits are applied to VaR, stress tests and other risk metrics, and the limits are subject to regular monitoring and reporting, with breaches escalated to the appropriate level of management. Risk profiles of our trading and underwriting activities are maintained within our risk appetite and supporting limits, and are monitored and reported to traders, management, senior executives and Board committees. Other significant controls include the independent valuation of financial assets and liabilities, as well as compliance with our Model Risk Management Framework to mitigate model risk.



## Trading Market Risk Measures

### Trading VaR and SVaR

Average Total Trading VaR declined year-over-year, as the impact of pandemic-related market volatility in 2020 no longer factored into the historical period VaR calculations by the middle of 2021. VaR trended higher in the second half of 2022 due to increased market volatility and portfolio changes, primarily in our equity derivatives portfolio. Average Total SVaR increased year-over-year, due to higher equity portfolio risks.

## Total Trading Value at Risk (VaR) Summary (1) (2)

| As at or for the year ended October 31 (Pre-tax Canadian $ equivalent in millions) | 2022 | | | | 2021 | | | |
|---|---|---|---|---|---|---|---|---|
| | **Year-end** | **Average** | **High** | **Low** | Year-end | Average | High | Low |
| Commodity VaR | **1.6** | **3.1** | **5.5** | **1.0** | 1.8 | 2.7 | 6.2 | 1.1 |
| Equity VaR | **14.1** | **13.1** | **18.4** | **8.5** | 10.8 | 14.9 | 24.9 | 10.0 |
| Foreign exchange VaR | **2.3** | **1.8** | **5.2** | **0.5** | 0.5 | 2.2 | 6.4 | 0.5 |
| Interest rate VaR (3) | **22.1** | **18.0** | **26.5** | **12.4** | 15.2 | 27.1 | 52.5 | 9.8 |
| Debt-specific risk | **10.2** | **5.7** | **10.5** | **1.8** | 3.0 | 3.3 | 5.4 | 1.9 |
| Diversification | **(15.0)** | **(15.1)** | **nm** | **nm** | (12.8) | (19.7) | nm | nm |
| Total Trading VaR | **35.3** | **26.6** | **38.2** | **18.1** | 18.5 | 30.5 | 53.5 | 15.3 |
| Total Trading SVaR | **64.4** | **53.6** | **70.8** | **34.2** | 55.8 | 45.7 | 65.4 | 36.3 |

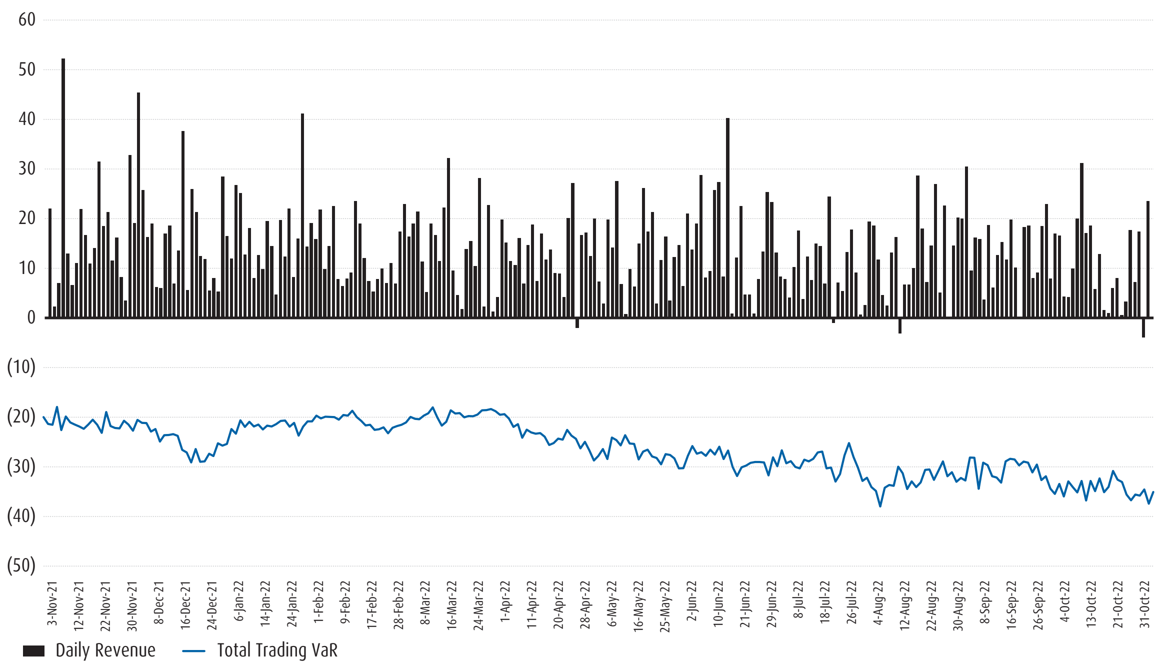
(1) One-day measure using a 99% confidence interval. Gains are presented in brackets and losses are presented as positive numbers.
(2) Stressed VaR is produced weekly.
(3) Interest rate VaR includes general credit spread risk.
nm – not meaningful

## Trading Net Revenue

The charts below present daily net revenues plotted against Total Trading VaR, along with a representation of daily net revenue distribution. In 2022, net trading losses were incurred on four days with none of these losses exceeding Total Trading VaR. A combination of market volatility, which had a negative impact on some of our positions, and lower than usual customer activity contributed to the losses for the four days.

### Trading Net Revenues versus Value at Risk

November 1, 2021 to October 31, 2022 (pre-tax basis, Canadian $ in millions)

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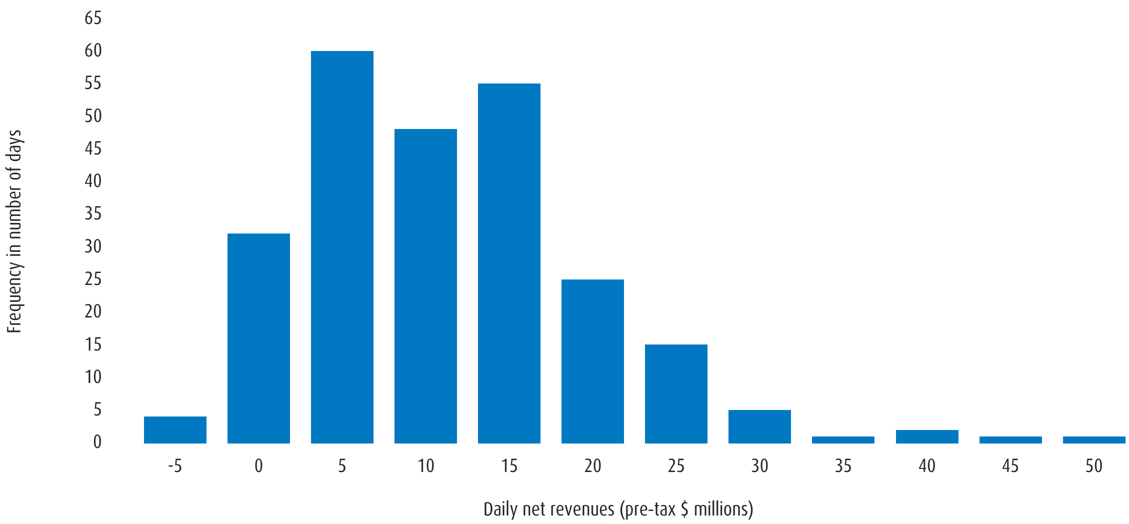
**Frequency Distribution of Daily Net Revenues**
Nov 1, 2021 to Oct 31, 2022 (Canadian $ in millions)






## Structural (Non-Trading) Market Risk

Structural market risk comprises interest rate risk arising from our banking activities (such as loans and deposits) and foreign exchange risk arising from our foreign currency operations and exposures.

## Structural Market Risk Governance

BMO's Corporate Treasury group is responsible for the ongoing management of structural market risk across the enterprise, with independent oversight provided by the Market Risk group. In addition to Board-approved limits on earnings at risk and economic value sensitivities to changes in interest rates, more granular management limits are in place to guide the daily management of this risk.

The RRC oversees structural market risk management, regularly reviews structural market risk positions and annually approves the structural market risk plan and limits. The RMC and Asset Liability Committee provide ongoing senior management oversight of risk positions and activity.

## Structural Market Risk Measurement

### Interest Rate Risk

Structural interest rate risk arises when changes in interest rates affect the market value, cash flows and earnings of assets and liabilities related to our banking activities. The objective of structural interest rate risk management is to maintain high-quality earnings and maximize sustainable product spreads, while managing any risk to the economic value of our net assets arising from changes in interest rates.

Structural interest rate risk primarily comprises interest rate mismatch risk and product embedded option risk.

Interest rate mismatch risk arises when there are differences in the scheduled maturities, repricing dates or reference rates of assets, liabilities and derivatives. The net interest rate mismatch, representing residual assets funded by common shareholders' equity, is managed to align with a target profile through interest rate swaps and securities.

Product embedded option risk arises when product features allow customers to alter cash flows, such as scheduled maturity or repricing dates, usually in response to changes in market conditions. Product embedded options include loan prepayments, deposit redemption privileges and committed rates on unadvanced mortgages. Product embedded options and associated customer behaviours are captured in risk modelling, and hedging programs may be used to manage this risk to low levels.

Structural interest rate risk is measured using simulations, earnings sensitivity and economic value sensitivity analysis, stress testing and gap analysis, in addition to other risk metrics.

**Earnings Sensitivity** is a measure of the impact of potential changes in interest rates on the projected 12-month pre-tax net income from a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

**Economic Value Sensitivity** is a measure of the impact of potential changes in interest rates on the market value of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

The models that measure structural interest rate risk incorporate projected changes in interest rates and predict the likely reaction of our customers to these changes. For customer loans and deposits with scheduled maturity and repricing dates (such as mortgages and term deposits), the models measure the extent to which customers are likely to use embedded options to alter those scheduled terms. For customer loans and deposits without scheduled maturity and repricing dates (such as credit card loans and chequing accounts), exposure is measured using models that adjust for elasticity in product pricing and reflect historical and forecasted trends in balances. The results generated by these structural market risk models, by their nature, have inherent uncertainty, as they reflect potential future pricing and customer behaviours, which may differ from actual experience. These models have been developed using statistical analysis and are independently validated and periodically updated through regular model performance assessment, back-testing and ongoing dialogue with the lines of business. Models developed to predict customer behaviour are also used to support product pricing. All models are subject to BMO's Model Risk Management Framework, which is described in more detail in the Enterprise-Wide Risk Management Framework section.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

Structural interest rate earnings sensitivity and economic value sensitivity to an immediate parallel increase or decrease of 100 basis points in the yield curve are disclosed in the table below. Prior to the third quarter of 2022, earnings and economic value sensitivities to declining interest rates were measured using a decrease of 25 basis points, due to the low interest rate environment that prevailed at that time.

On December 20, 2021, we announced our intention to acquire Bank of the West. To mitigate the impact of movements in the Canadian dollar equivalent of the purchase price on the closing of the acquisition, we entered into interest rate swap arrangements that would offset the impact of foreign exchange rate movements on our capital ratios. Any exposure to interest rate risk related to these arrangements was largely offset through the purchase of a portfolio of matched-duration U.S. treasuries and other balance sheet instruments that generate net interest income. Refer to the Enterprise-Wide Capital Management and Significant Events sections for further discussion.

Structural economic value sensitivity to rising interest rates primarily reflects a lower market value for fixed rate loans. Structural economic value sensitivity to falling interest rates primarily reflects the impact of a higher market value for fixed rate loans and minimum modelled client deposit rates. Structural economic value exposure to rising interest rates and the benefits of falling interest rates decreased relative to October 31, 2021, primarily due to a modestly shorter net duration of BMO's position in anticipation of the Bank of the West acquisition, partially offset by the impact of higher projected interest rate levels following the increase in term market rates during the current year. Structural earnings sensitivity quantifies the potential impact of interest rate changes on structural balance sheet pre-tax net income over the next 12 months. Structural earnings sensitivity to falling interest rates primarily reflects the risk of fixed and floating rate loans repricing at lower rates and the more limited ability to reduce deposit pricing as rates fall. The benefits to structural earnings of rising interest rates primarily reflect the positive impact of reinvesting our net equity and non-rate sensitive deposits into higher term rates. Structural earnings benefits of rising interest rates increased in 2022 relative to 2021, largely due to a modestly shorter net duration of BMO's position in anticipation of the Bank of the West acquisition. Structural earnings exposure to falling interest rates remained relatively unchanged. Earnings exposure to falling interest rates was due to the negative impact of reinvesting net equity and non-rate sensitive deposits into lower term rates, as well as the impact of floor rates on deposit expense.

During 2022, both economic value sensitivity and earnings sensitivity remained within limits established by the Board of Directors.

## Structural Interest Rate Sensitivity (1)

| (Pre-tax Canadian $ equivalent in millions) | **Economic value sensitivity** | | | | **Earnings sensitivity over the next 12 months** | | | |
|---|---|---|---|---|---|---|---|---|
| | **October 31, 2022** | | | October 31, 2021 | **October 31, 2022** | | | October 31, 2021 |
| | **Canada** (3) | **United States** | **Total** | Total | **Canada** (3) | **United States** | **Total** | Total |
| 100 basis point increase | **(683.6)** | **(306.6)** | **(990.2)** | (1,459.1) | **232.0** | **266.9** | **498.9** | 383.7 |
| 25 basis point decrease | **159.7** | **42.0** | **201.6** | 264.9 | **(59.8)** | **(79.8)** | **(139.6)** | (141.6) |
| 100 basis point decrease (2) | **599.1** | **48.7** | **647.9** | na | **(246.0)** | **(349.2)** | **(595.2)** | na |

(1) Losses are presented in brackets and gains are presented as positive numbers.
(2) Due to the low interest rate environment that prevailed between April 30, 2020 and April 30, 2022, economic value sensitivity and earnings sensitivity to declining interest rates are measured using a decrease of 25 basis points. Not applicable for October 31, 2021.
(3) Includes Canadian dollar and other currencies.

na – not applicable

The following table presents net loans and acceptances by interest rate sensitivity:

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| Fixed rate (1) | | |
| Contractual amounts that will reprice/repay within 3 months | **148,036** | 126,452 |
| Contractual amounts that will reprice/repay after 3 months | **181,768** | 181,130 |
| Floating rate (2) | **215,337** | 145,903 |
| Non-rate sensitive (3) | **19,433** | 18,798 |
| Total | **564,574** | 472,283 |

(1) Includes index-based loans.
(2) Floating rate only includes loans that reprice immediately upon a change in interest rates.
(3) Includes credit card balances that are paid when due, customers' liability under acceptances, credit impaired loans and allowance for credit losses.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Insurance Market Risk

Insurance market risk includes interest rate and equity market risk arising from our insurance business activities. A 100 basis point increase in interest rates as at October 31, 2022 would result in an increase in earnings before tax of $35 million ($40 million as at July 31, 2022 and $48 million as at October 31, 2021). A 25 basis point decrease in interest rates as at October 31, 2022 would result in a decrease in earnings before tax of $9 million ($9 million as at July 31, 2022 and $12 million as at October 31, 2021). A 10% increase in equity market values as at October 31, 2022 would result in an increase in earnings before tax of $13 million ($17 million as at July 31, 2022 and $22 million as at October 31, 2021). A 10% decrease in equity market values as at October 31, 2022 would result in a decrease in earnings before tax of $13 million ($16 million as at July 31, 2022 and $22 million as at October 31, 2021). We may enter into hedging arrangements to offset the impact of changes in equity market values on our earnings, and we did so during the 2022 fiscal year. The impact of insurance market risk on earnings is reflected in insurance claims, commissions and changes in policy benefit liabilities in our Consolidated Statement of Income, and the corresponding change in the fair value of BMO's policy benefit liabilities is reflected in other liabilities in our Consolidated Balance Sheet. The impact of insurance market risk is not reflected in the table above.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

## Non-Trading Foreign Exchange Risk

Structural foreign exchange risk arises primarily from translation risk related to our net investment in U.S. operations and from transaction risk associated with U.S.-dollar-denominated net income.

Translation risk represents the impact that changes in foreign exchange rates could have on our reported shareholders' equity and capital ratios. We may enter into arrangements to offset the impact of foreign exchange rate movements on our capital ratios, and we did so during the 2022 fiscal year. In addition, BMO entered into forward contracts that qualify for hedge accounting during the year to mitigate the impact of movements in the Canadian dollar equivalent of the purchase price on the closing of the announced Bank of the West acquisition. Changes in the fair value of these forward contracts related to the announced acquisition are recorded in other comprehensive income. Refer to the Enterprise-Wide Capital Management and Significant Events sections for further discussion.

Transaction risk represents the impact that fluctuations in the Canadian dollar/U.S. dollar exchange rate could have on the Canadian dollar equivalent of BMO's U.S.-dollar-denominated financial results. Exchange rate fluctuations will affect future results measured in Canadian dollars, and the impact on those results is a function of the periods during which revenues, expenses and provisions for credit losses arise. Hedging positions may be taken to partially offset the pre-tax effects of Canadian dollar/U.S. dollar exchange rate fluctuations on financial results, although we did not enter into any hedging arrangements in the current or prior year. If future results are consistent with results in 2022, each one cent increase (decrease) in the Canadian dollar/U.S. dollar exchange rate would be expected to increase (decrease) the Canadian dollar equivalent of U.S. segment net income before income taxes for the year by $33 million, in the absence of hedging arrangements. Refer to the Foreign Exchange section for a more complete discussion of the effects of changes in foreign exchange rates on our results.

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## Linkages between Balance Sheet Items and Market Risk Disclosures

The table below presents items reported on the Consolidated Balance Sheet that are subject to market risk, comprising balances that are subject to either traded risk or non-traded risk measurement techniques.

| | **As at October 31, 2022** | | | | As at October 31, 2021 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Subject to market risk** | | | | Subject to market risk | | | |
| (Canadian $ in millions) | **Consolidated Balance Sheet** | **Traded risk** (1) | **Non-traded risk** (2) | **Not subject to market risk** | Consolidated Balance Sheet | Traded risk (1) | Non-traded risk (2) | Not subject to market risk | Primary risk factors for non-traded risk balances |
| **Assets Subject to Market Risk** | | | | | | | | | |
| Cash and cash equivalents | **87,466** | **–** | **87,466** | **–** | 93,261 | – | 93,261 | – | Interest rate |
| Interest bearing deposits with banks | **5,734** | **142** | **5,592** | **–** | 8,303 | 94 | 8,209 | – | Interest rate |
| Securities | **273,262** | **108,303** | **164,959** | **–** | 232,849 | 104,412 | 128,437 | – | Interest rate, credit spread, equity |
| Securities borrowed or purchased under resale agreements | **113,194** | **–** | **113,194** | **–** | 107,382 | – | 107,382 | – | Interest rate |
| Loans and acceptances (net of allowance for credit losses) | **551,339** | **3,501** | **547,838** | **–** | 458,262 | 3,665 | 454,597 | – | Interest rate, foreign exchange |
| Derivative instruments | **48,160** | **45,537** | **2,623** | **–** | 36,713 | 34,350 | 2,363 | – | Interest rate, foreign exchange |
| Customers' liabilities under acceptances | **13,235** | **–** | **13,235** | **–** | 14,021 | – | 14,021 | – | Interest rate |
| Other assets | **46,809** | **3,030** | **26,561** | **17,218** | 37,384 | 3,359 | 16,970 | 17,055 | Interest rate |
| Total Assets | **1,139,199** | **160,513** | **961,468** | **17,218** | 988,175 | 145,880 | 825,240 | 17,055 | |
| **Liabilities Subject to Market Risk** | | | | | | | | | |
| Deposits | **769,478** | **26,305** | **743,173** | **–** | 685,631 | 22,665 | 662,966 | – | Interest rate, foreign exchange |
| Derivative instruments | **59,956** | **46,803** | **13,153** | **–** | 30,815 | 27,875 | 2,940 | – | Interest rate, foreign exchange |
| Acceptances | **13,235** | **–** | **13,235** | **–** | 14,021 | – | 14,021 | – | Interest rate |
| Securities sold but not yet purchased | **40,979** | **40,979** | **–** | **–** | 32,073 | 32,073 | – | – | |
| Securities lent or sold under repurchase agreements | **103,963** | **–** | **103,963** | **–** | 97,556 | – | 97,556 | – | Interest rate |
| Other liabilities | **72,400** | **60** | **71,815** | **525** | 63,663 | 85 | 63,165 | 413 | Interest rate |
| Subordinated debt | **8,150** | **–** | **8,150** | **–** | 6,893 | – | 6,893 | – | Interest rate |
| Total Liabilities | **1,068,161** | **114,147** | **953,489** | **525** | 930,652 | 82,698 | 847,541 | 413 | |

(1) Primarily comprises balance sheet items that are subject to the trading and underwriting risk management framework and recorded at fair value through profit or loss.
(2) Primarily comprises balance sheet items that are subject to the structural balance sheet insurance risk management framework and secured financing transactions.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

# Insurance Risk

**Insurance risk** is the potential for loss as a result of actual experience differing from that assumed when an insurance product was designed and priced, and comprises claims risk, policyholder behaviour risk and expense risk.

Insurance risk generally entails the inherent unpredictability that can arise from the assumption of long-term policy liabilities or uncertainty regarding future events. Insurance provides protection against the financial consequences of insured risks by transferring those risks to the insurer (under specific terms and conditions) in exchange for premiums. Insurance risk is inherent in all of our insurance products: life insurance, annuities (which include the pension risk transfer business), accident and sickness insurance, and creditor insurance, as well as the reinsurance business. Insurance risk consists of:

- Claims risk – the risk that the actual magnitude or frequency of claims will differ from those assumed in the pricing or underwriting process, including mortality risk, morbidity risk, longevity risk and catastrophic risk;
- Policyholder behaviour risk – the risk that the behaviour of policyholders in regard to premium payments, withdrawals or loans, as well as policy lapses and surrenders and other voluntary terminations, will differ from the behaviour assumed in the pricing process; and
- Expense risk – the risk that actual expenses arising from acquiring and administering policies and processing claims will exceed the expenses assumed in the pricing process.

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Our risk governance practices provide effective independent oversight and control of risk within BMO Insurance. BMO Insurance's risk management framework addresses the identification, assessment, management, monitoring and reporting of risks. The framework includes: the Risk Appetite Statement and key risk metrics; insurance risk policies and processes, including limits; capital requirements; stress testing; risk reports; the Own Risk and Solvency Assessment; and ongoing monitoring of experience. Senior management within the various lines of business uses this framework, serving as the first line of defence and assuming the primary responsibility for managing insurance risk. Second-line-of-defence oversight is provided by the CRO, BMO Insurance, who reports to the Head of Market Risk and Chief Risk Officer, BMO Capital Markets. Internal risk committees, the boards of directors of the BMO Insurance subsidiaries and senior management provide senior governance and review. In particular, the Risk Committee of BMO Insurance oversees and reports on risk management activities to the insurance companies' boards of directors on a quarterly basis. In addition, the Audit and Conduct Review Committee of the Board acts as the Audit and Conduct Review Committee for BMO Life Insurance Company.

A robust product approval process is a cornerstone of the BMO Insurance risk management framework, as it identifies, assesses and manages risks associated with new insurance products or changes to existing products. This process, along with guidelines and practices for underwriting and claims management, promotes the effective identification, assessment and management of insurance risk. Reinsurance transactions that transfer or cede insurance risk from BMO Insurance to independent reinsurance companies also mitigate our exposure to insurance risk by diversifying risk and limiting claims. BMO Insurance has exited the Property and Casualty Reinsurance market, with the last remaining treaty terminated in January 2021, significantly reducing our exposure to catastrophic claims and in turn, the risks arising from climate change. However, a certain portion of our exposure to catastrophic claims remains as the portfolio runs off and until all outstanding claims that were made prior to the treaty termination dates are settled and paid.

Given that much of the life insurance portfolio is reinsured and that we have a well-balanced portfolio of life insurance products and annuities forming a natural hedge for exposures to insurance risk, claims related to the COVID-19 pandemic have not had a significant impact on BMO Insurance's overall financial results. In line with BMO's Enterprise Risk Management Framework, as well as the corresponding framework within BMO Insurance, claims related to the COVID-19 pandemic continue to be tracked separately from other types of claims.

**Caution**

This Insurance Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Liquidity and Funding Risk

**Liquidity and funding risk** is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. Financial commitments include liabilities to depositors and suppliers, as well as lending, investment and pledging commitments.

Managing liquidity and funding risk is integral to maintaining enterprise soundness and safety, depositor confidence and earnings stability. It is BMO's policy to maintain sufficient liquid assets and funding capacity to meet our financial commitments, even in times of stress.

## Liquidity and Funding Risk Governance

The Corporate Treasury group and the operating groups, as the first line of defence, are responsible for the ongoing identification, assessment and management of liquidity and funding risk. The Corporate Treasury group is responsible for monitoring and reporting liquidity and funding risk across the enterprise, and develops and recommends for approval the Liquidity and Funding Risk Management Framework and the related risk appetite and limits, monitors compliance with relevant corporate policies, and assesses the impact of market events on liquidity and funding requirements on an ongoing basis.

Enterprise Risk and Portfolio Management, as the second line of defence, exercises oversight, independent risk assessment and effective challenge of liquidity and funding management frameworks, policies, limits, monitoring and reporting across the enterprise.

The Risk Management Committee (RMC) and Asset Liability Committee (ALCO) provide senior management oversight, and review and discuss significant liquidity and funding policies, issues and developments that arise in the pursuit of BMO's strategic priorities. The Risk Review Committee (RRC) exercises oversight of the management of liquidity and funding risk, annually approves the applicable policies, limits and contingency plan, and regularly reviews liquidity and funding positions.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

## Liquidity and Funding Risk Management

BMO's Liquidity and Funding Risk Management Framework is defined and authorized under Board-approved corporate policies and management-approved standards. These policies and standards set out key management principles, liquidity and funding metrics and related limits, as well as roles and responsibilities for the management of liquidity and funding risk across the enterprise.

We have a robust limit structure in place in order to manage liquidity and funding risk. These limits define risk appetite for the key Stress Net Liquidity Position (Stress NLP) measure, regulatory liquidity ratios, secured and unsecured funding appetite (for both trading and structural activities), and enterprise collateral pledging. Limits also establish the tolerance for concentrations of maturities, as well as requirements for counterparty liability diversification, business pledging activity, and the size and type of uncommitted and committed credit and liquidity facilities that may be outstanding.

Operating within these limits helps to confirm that liquidity and funding risk is appropriately managed. An enterprise-wide contingency plan designed to facilitate effective risk management in the event of a disruption is also in place. Early warning indicators identified in the contingency plan are regularly monitored in order to detect any signs of rising levels of liquidity or funding risk in the market, or other risks specific to BMO.

BMO legal entities include regulated and foreign subsidiaries and branches, and as a result, movements of funds between entities in the corporate group are subject to, among other things, the liquidity, funding and capital adequacy requirements of these entities. As such, liquidity and funding positions are managed on both a consolidated and key legal entity basis. Liquidity and funding risk management policies and limits, informed by the laws and regulations that apply to each entity, are in place for key legal entities, and positions are regularly reviewed at the key legal entity level to confirm compliance with applicable laws and regulations.

BMO continued to maintain a strong liquidity position during 2022. Customer loans and deposits continued to grow, while wholesale funding increased reflecting net issuances. Our liquidity metrics, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), exceeded internal and regulatory requirements throughout 2022.

## Liquidity and Funding Risk Measurement

A key component of liquidity risk management is the measurement of liquidity risk under stress. We use Stress NLP as a key measure of liquidity risk. Stress NLP represents the amount by which liquid assets exceed potential funding needs under a severe combined enterprise-specific and systemic stress scenario. Potential funding needs may arise from obligations to repay retail, commercial and wholesale deposits that are withdrawn or not renewed, or to fund drawdowns on available credit and liquidity lines, as well as from obligations to pledge collateral due to ratings downgrades or market volatility, along with the continuing need to fund new assets and strategic investments. Potential funding needs are quantified by applying factors to various business activities based on management's view of the relative level of liquidity risk related to each activity. These factors vary by deposit classification (e.g., retail, small business, non-financial corporate or wholesale counterparties) and deposit type (e.g., insured, uninsured, operational or non-operational deposits), as well as by commitment type (e.g., uncommitted or committed credit or liquidity facilities by counterparty type). The stress scenario also considers the time horizon over which liquid assets can be monetized and management's assessment of the liquidity value of those assets under conditions of market stress. These funding needs are assessed under severe systemic and enterprise-specific stress scenarios, and a combination thereof.

Stress testing results are evaluated against our stated risk tolerance and are considered in management's decisions on limit-setting and internal liquidity transfer pricing, and they also help to inform and shape the design of business plans and contingency plans. The Liquidity and Funding Risk Management Framework is integrated with enterprise-wide stress testing.

In addition to Stress NLP, we regularly monitor positions in relation to the limits and liquidity ratios noted in the Liquidity and Funding Risk Management section above. These include regulatory metrics such as LCR, Net Cumulative Cash Flow and NSFR.

## Unencumbered Liquid Assets

Unencumbered liquid assets include high-quality assets that are marketable, can be pledged as security for borrowings, and can be converted to cash in a time frame that meets liquidity and funding requirements. Liquid assets are primarily held in our trading businesses, as well as in supplemental liquidity pools that are maintained for contingent liquidity risk management purposes. The liquidity value recognized for different asset classes under BMO's risk management framework reflects management's assessment of the liquidity value of those assets under a severe stress scenario. Liquid assets held in our trading businesses include cash on deposit with central banks, short-term deposits with other financial institutions, highly-rated debt securities, equity securities and short-term reverse repurchase agreements. Supplemental liquidity pool assets predominantly comprise cash on deposit with central banks, securities, and short-term reverse repurchase agreements of highly-rated Canadian federal and provincial government debt and U.S. federal government and agency debt**.** Substantially all supplemental liquidity pool assets meet the definition of high-quality liquid assets under Basel III. Approximately 65% of the supplemental liquidity pool is held at the parent bank level in assets denominated in Canadian or U.S. dollars, with the majority of the remaining supplemental liquidity pool held at our U.S. bank entity, BMO Harris Bank, in U.S.-dollar-denominated assets. The size of the supplemental liquidity pool is integrated with our assessment of liquidity risk. To meet local regulatory requirements, certain legal entities maintain their own minimum liquidity positions. There may be legal and regulatory restrictions on BMO's ability to use liquid assets held at one legal entity to support the liquidity requirements of another legal entity.

In the ordinary course of business, we may encumber a portion of cash and securities holdings as collateral in support of trading activities and participation in clearing and payment systems in Canada and abroad. In addition, we may receive liquid assets as collateral and may re-pledge these assets in exchange for cash or as collateral in support of trading activities. Net unencumbered liquid assets, defined as on-balance sheet assets, such as BMO-owned cash and securities and securities borrowed or purchased under resale agreements, plus other off-balance sheet eligible collateral received, less assets encumbered as collateral, totalled $335.3 billion as at October 31, 2022, compared with $317.3 billion as at October 31, 2021. The increase in unencumbered liquid assets was primarily due to higher securities balances, partially offset by lower cash balances. Net unencumbered liquid assets are primarily held at the parent bank level, at BMO Harris Bank, and in our broker/dealer operations. In addition to liquid assets, we have access to the Bank of Canada's lending assistance, the Federal Reserve Bank discount window in the United States and European Central Bank standby liquidity facilities. We do not rely on central bank facilities as a source of available liquidity when assessing the soundness of our liquidity position.

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In addition to cash and securities holdings, we may also pledge other assets, including mortgages and loans, to raise long-term secured funding. As part of the Liquidity and Funding Risk Management Framework, a Pledging of Assets corporate policy sets out the framework and limits for pledging financial and non-financial assets.

BMO's total encumbered assets and unencumbered liquid assets are summarized in the table below. Refer to Note 24 of the consolidated financial statements for further information on pledged assets.

## Liquid Assets

| (Canadian $ in millions) | Bank-owned assets | Other cash and securities received | Total gross assets (1) | Encumbered assets | Net unencumbered assets (2) | Net unencumbered assets (2) |
|---|---|---|---|---|---|---|
| | As at October 31, 2022 | | | | | As at October 31, 2021 |
| Cash and cash equivalents | **87,466** | **–** | **87,466** | **87** | **87,379** | 93,151 |
| Deposits with other banks | **5,734** | **–** | **5,734** | **–** | **5,734** | 8,303 |
| Securities and securities borrowed or purchased under resale agreements | | | | | | |
| Sovereigns / Central banks / Multilateral development banks | **143,094** | **101,481** | **244,575** | **132,635** | **111,940** | 76,410 |
| NHA mortgage-backed securities and U.S. agency mortgage-backed securities and collateralized mortgage obligations | **54,601** | **5,565** | **60,166** | **20,188** | **39,978** | 40,422 |
| Corporate and other debt | **22,560** | **19,328** | **41,888** | **8,190** | **33,698** | 35,330 |
| Corporate equity | **53,007** | **50,926** | **103,933** | **63,967** | **39,966** | 48,509 |
| Total securities and securities borrowed or purchased under resale agreements | **273,262** | **177,300** | **450,562** | **224,980** | **225,582** | 200,671 |
| NHA mortgage-backed securities (reported as loans at amortized cost) (3) | **21,881** | **–** | **21,881** | **5,277** | **16,604** | 15,126 |
| Total liquid assets | **388,343** | **177,300** | **565,643** | **230,344** | **335,299** | 317,251 |

(1) Gross assets included bank-owned assets and cash and securities received from third parties.
(2) Net unencumbered liquid assets are defined as total gross assets less encumbered assets.
(3) Under IFRS, National Housing Act (NHA) mortgage-backed securities that include mortgages owned by BMO as the underlying collateral are classified as loans. Unencumbered NHA mortgage-backed securities have liquidity value and are included as liquid assets under BMO's Liquidity and Funding Risk Management Framework. This amount is shown as a separate line item, NHA mortgage-backed securities.

## Asset Encumbrance

| (Canadian $ in millions)<br>As at October 31, 2022 | Total gross assets (1) | Encumbered (2): Pledged as collateral | Encumbered (2): Other encumbered | Net unencumbered: Other unencumbered (3) | Net unencumbered: Available as collateral (4) |
|---|---|---|---|---|---|
| Cash and deposits with other banks | **93,200** | **–** | **87** | **–** | **93,113** |
| Securities (5) | **472,443** | **183,275** | **46,982** | **12,620** | **229,566** |
| Loans | **529,458** | **71,139** | **656** | **299,358** | **158,305** |
| Other assets | | | | | |
| Derivative instruments | **48,160** | **–** | **–** | **48,160** | **–** |
| Customers' liability under acceptances | **13,235** | **–** | **–** | **13,235** | **–** |
| Premises and equipment | **4,841** | **–** | **–** | **4,841** | **–** |
| Goodwill | **5,285** | **–** | **–** | **5,285** | **–** |
| Intangible assets | **2,193** | **–** | **–** | **2,193** | **–** |
| Current tax assets | **1,421** | **–** | **–** | **1,421** | **–** |
| Deferred tax assets | **1,175** | **–** | **–** | **1,175** | **–** |
| Other assets | **31,894** | **13,991** | **–** | **17,903** | **–** |
| Total other assets | **108,204** | **13,991** | **–** | **94,213** | **–** |
| Total assets | **1,203,305** | **268,405** | **47,725** | **406,191** | **480,984** |

| (Canadian $ in millions)<br>As at October 31, 2021 | Total gross assets (1) | Encumbered (2): Pledged as collateral | Encumbered (2): Other encumbered | Net unencumbered: Other unencumbered (3) | Net unencumbered: Available as collateral (4) |
|---|---|---|---|---|---|
| Cash and deposits with other banks | 101,564 | – | 110 | – | 101,454 |
| Securities (5) | 433,199 | 180,955 | 36,447 | 13,064 | 202,733 |
| Loans | 438,617 | 53,485 | 1,171 | 238,283 | 145,678 |
| Other assets | | | | | |
| Derivative instruments | 36,713 | – | – | 36,713 | – |
| Customers' liability under acceptances | 14,021 | – | – | 14,021 | – |
| Premises and equipment | 4,454 | – | – | 4,454 | – |
| Goodwill | 5,378 | – | – | 5,378 | – |
| Intangible assets | 2,266 | – | – | 2,266 | – |
| Current tax assets | 1,588 | – | – | 1,588 | – |
| Deferred tax assets | 1,287 | – | – | 1,287 | – |
| Other assets | 22,411 | 6,436 | – | 15,975 | – |
| Total other assets | 88,118 | 6,436 | – | 81,682 | – |
| Total assets | 1,061,498 | 240,876 | 37,728 | 333,029 | 449,865 |

(1) Gross assets included on-balance sheet and off-balance sheet assets.
(2) Pledged as collateral refers to the portion of on-balance sheet assets and other cash and securities that is pledged through repurchase agreements, securities lending, derivative contracts, minimum required deposits at central banks, and requirements associated with participation in clearing houses and payment systems. Other encumbered assets include assets that are restricted for legal or other reasons, such as restricted cash and short sales.
(3) Other unencumbered assets included select liquid asset holdings that management believes are not readily available to support BMO's liquidity requirements. These included securities of $12.6 billion as at October 31, 2022, which included securities held at BMO's insurance subsidiary, significant equity investments and certain investments held at BMO's merchant banking business. Other unencumbered assets included mortgages and loans that may be securitized to access secured funding.
(4) Loans included in available as collateral represented loans currently lodged at central banks that could potentially be used to access central bank funding. Loans available for pledging as collateral do not include other sources of additional liquidity that may be realized from BMO's loan portfolio, such as incremental securitization, covered bond issuances and U.S. Federal Home Loan Bank (FHLB) advances.
(5) Included securities, securities borrowed or purchased under resale agreements and NHA mortgage-backed securities (reported as loans at amortized cost).

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

## Funding Strategy

BMO's funding strategy requires that secured and unsecured wholesale funding used to support loans and less liquid assets must have a term (typically maturing in two to ten years) that will support the effective term to maturity of these assets. Secured and unsecured wholesale funding for liquid trading assets is largely shorter term (maturing in one year or less), is aligned with the liquidity of the assets being funded, and is subject to limits on aggregate maturities across different periods. Supplemental liquidity pools are funded largely with wholesale term funding.

We maintain a large and stable base of customer deposits that, in combination with our strong capital position, is a source of strength. This supports the maintenance of a sound liquidity position and reduces reliance on wholesale funding. Customer deposits totalled $544.4 billion as at October 31, 2022, increasing from $498.9 billion in 2021, primarily due to strong growth in both retail and commercial deposits and the impact of the stronger U.S. dollar.

Total secured and unsecured wholesale funding outstanding, which largely consists of negotiable marketable securities, was $236.8 billion as at October 31, 2022, with $63.6 billion sourced as secured funding and $173.2 billion sourced as unsecured funding. Total wholesale funding outstanding increased from $190.4 billion as at October 31, 2021, primarily due to the net issuance of wholesale funding during the year and the impact of the stronger U.S. dollar. The mix and maturities of BMO's wholesale term funding are outlined later in this section. Additional information on deposit maturities can also be found in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section. We maintain a sizeable portfolio of unencumbered liquid assets, totalling $335.3 billion as at October 31, 2022 and $317.3 billion as at October 31, 2021, that can be monetized to meet potential funding requirements, as described in the Unencumbered Liquid Assets section above.

## Wholesale Funding Maturities (1)

| | As at October 31, 2022 | | | | | | | | As at October 31, 2021 |
|---|---|---|---|---|---|---|---|---|---|
| (Canadian $ in millions) | **Less than 1 month** | **1 to 3 months** | **3 to 6 months** | **6 to 12 months** | **Subtotal less than 1 year** | **1 to 2 years** | **Over 2 years** | **Total** | Total |
| Deposits from banks | **5,127** | **541** | **1,002** | **2,880** | **9,550** | **–** | **–** | **9,550** | 3,421 |
| Certificates of deposit and commercial paper | **9,719** | **22,586** | **18,701** | **28,896** | **79,902** | **263** | **531** | **80,696** | 71,898 |
| Bearer deposit notes | **446** | **122** | **1,055** | **38** | **1,661** | **–** | **–** | **1,661** | 2,364 |
| Asset-backed commercial paper (ABCP) | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | – |
| Senior unsecured medium-term notes | **2,031** | **1,691** | **4,007** | **9,286** | **17,015** | **18,743** | **29,476** | **65,234** | 51,837 |
| Senior unsecured structured notes (2) | **116** | **40** | **–** | **71** | **227** | **34** | **7,689** | **7,950** | 5,182 |
| Secured funding | | | | | | | | | |
| Mortgage and HELOC securitizations | **–** | **1,749** | **409** | **2,231** | **4,389** | **3,456** | **12,540** | **20,385** | 20,128 |
| Covered bonds | **–** | **2,021** | **5,751** | **2,358** | **10,130** | **2,126** | **16,791** | **29,047** | 23,405 |
| Other asset-backed securitizations (3) | **–** | **865** | **721** | **59** | **1,645** | **249** | **4,737** | **6,631** | 5,316 |
| Federal Home Loan Bank advances | **–** | **–** | **–** | **–** | **–** | **3,406** | **4,088** | **7,494** | – |
| Subordinated debt | **–** | **–** | **–** | **–** | **–** | **–** | **8,150** | **8,150** | 6,892 |
| Total | **17,439** | **29,615** | **31,646** | **45,819** | **124,519** | **28,277** | **84,002** | **236,798** | 190,443 |
| Of which: | | | | | | | | | |
| Secured | **–** | **4,635** | **6,881** | **4,648** | **16,164** | **9,237** | **38,156** | **63,557** | 48,849 |
| Unsecured | **17,439** | **24,980** | **24,765** | **41,171** | **108,355** | **19,040** | **45,846** | **173,241** | 141,594 |
| Total (4) | **17,439** | **29,615** | **31,646** | **45,819** | **124,519** | **28,277** | **84,002** | **236,798** | 190,443 |

(1) Wholesale unsecured funding primarily included funding raised through the issuance of negotiable marketable securities. Wholesale funding excluded repo transactions and bankers' acceptances, which are disclosed in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section, and also excluded ABCP issued by certain ABCP conduits that are not consolidated for financial reporting purposes.

(2) Primarily issued to institutional investors.

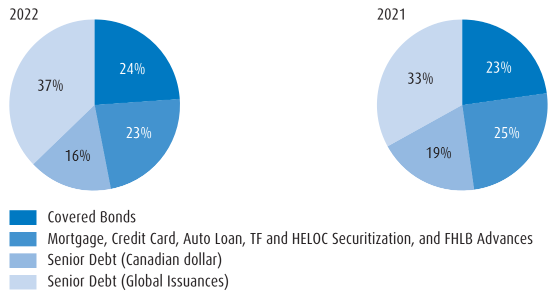
(3) Included credit card, auto and transportation finance loan securitizations.

(4) Total wholesale funding comprised Canadian-dollar-denominated funding totalling $50.0 billion and U.S.-dollar-denominated and other foreign-currency-denominated funding totalling $186.8 billion as at October 31, 2022.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

Diversification of our wholesale term funding sources is an important part of our overall liquidity management strategy. Our wholesale term funding activities are well-diversified by jurisdiction, currency, investor segment, instrument type and maturity profile. We maintain ready access to long-term wholesale funding through various borrowing programs, including a European Note Issuance Program, Canadian, Australian and U.S. Medium-Term Note programs, Canadian and U.S. mortgage securitizations, Canadian credit card loans, auto loans and home equity line of credit (HELOC) securitizations, U.S. transportation finance loans, covered bonds, and Canadian and U.S. senior unsecured deposits.

**Wholesale Capital Market Term Funding Composition** (%)




Our wholesale term funding plan seeks to ensure sufficient funding capacity is available to execute business strategies. The funding plan considers expected maturities, as well as asset and liability growth projected for businesses in our forecasting and planning processes, and assesses funding needs in relation to the sources available. The funding plan is reviewed annually by the senior management committees with specific related responsibilities and approved by the RRC, and is regularly updated to reflect actual results and incorporate updated forecast information.

## Regulatory Developments

During the year, OSFI announced changes to its Liquidity Adequacy Requirements Guideline that are effective April 1, 2023. The changes primarily relate to the calculation of the OSFI Net Cumulative Cash Flow supervisory tool. We do not anticipate a material impact on our liquidity and funding practices or requirements as a result of these changes.

## Credit Ratings

The credit ratings assigned to BMO's short-term and senior long-term debt securities by external rating agencies are important for the bank in raising both capital and funding to support its business operations. Maintaining strong credit ratings allows us to access the wholesale markets at competitive pricing levels. Should BMO's credit ratings experience a downgrade, our cost of funding would likely increase and our access to funding and capital through the wholesale markets could be reduced. A material downgrade of BMO's ratings could also have other consequences, including those set out in Note 8 of the consolidated financial statements.

The credit ratings assigned to BMO's senior debt by rating agencies are indicative of high-grade, high-quality issues. During the third quarter of fiscal 2022, Moody's, Standard & Poor's (S&P), DBRS and Fitch affirmed their ratings for BMO. Moody's, S&P and DBRS have a stable outlook on BMO and Fitch has a negative outlook.

As at October 31, 2022

| Rating agency | Short-term debt | Senior debt (1) | Long-term deposits / Legacy senior debt (2) | Subordinated debt (NVCC) | Outlook |
|---|---|---|---|---|---|
| Moody's | P-1 | A2 | Aa2 | Baa1(hyb) | Stable |
| S&P | A-1 | A- | A+ | BBB+ | Stable |
| Fitch | F1+ | AA- | AA | A | Negative |
| DBRS | R-1 (high) | AA (low) | AA | A (low) | Stable |

(1) Subject to conversion under the Bank Recapitalization (Bail-In) Regime.
(2) Long-term deposits / Legacy senior debt includes senior debt issued prior to September 23, 2018 and senior debt issued on or after September 23, 2018 that is excluded from the Bank Recapitalization (Bail-In) Regime.

We are required to deliver collateral to certain counterparties in the event of a downgrade of BMO's current credit rating. The incremental collateral required is based on mark-to-market exposure, collateral valuations and collateral threshold arrangements, as applicable. As at October 31, 2022, we would be required to deliver additional collateral to counterparties totalling $161 million, $429 million and $1,340 million as a result of a one-notch, two-notch and three-notch downgrade, respectively.

## Liquidity Coverage Ratio

The Liquidity Coverage Ratio (LCR) is calculated in accordance with the Liquidity Adequacy Requirements (LAR) Guideline issued by the Office of the Superintendent of Financial Institutions (OSFI) and is summarized in the following table. The LCR is calculated on a daily basis as the ratio of High-Quality Liquid Assets (HQLA) held to total net stressed cash outflows over the next 30 calendar days. BMO's HQLA primarily comprises cash, highly-rated debt issued or backed by governments, highly-rated covered bonds and non-financial corporate debt, and non-financial equities that are part of a major stock index. Net cash flows include outflows from deposits, secured and unsecured wholesale funding, commitments and potential collateral requirements, offset by permitted inflows from loans, securities lending activities and other non-HQLA debt maturing over a 30-day horizon. Weightings prescribed by OSFI are applied to cash flows and HQLA to arrive at the weighted values and the LCR. The LCR does not reflect excess liquidity in BMO Financial Corp. (BFC) that is greater than 100%, because of limitations on the transfer of liquidity between BFC and the parent bank. Canadian domestic systemically important banks (D-SIBs), including BMO, are required to maintain a minimum LCR of 100%. The average daily LCR for the quarter ended October 31, 2022 was 135%, indicating a surplus of $53 billion above the regulatory minimum, and an increase of 10% from 125% in 2021 due to higher HQLA and lower net cash outflows. While banks are required to maintain an LCR of greater than 100% in normal conditions, they are also expected to be able to utilize HQLA during a period of stress, which may result in an LCR of less than 100% during such a period. The LCR is only one measure of a bank's liquidity position and does not fully capture all of its liquid assets or the funding alternatives that may be available during a period of stress. BMO's total liquid assets are shown in the Liquid Assets table.

| | For the quarter ended October 31, 2022 | |
|---|---|---|
| (Canadian $ in billions, except as noted) | **Total unweighted value (average)** (1) (2) | **Total weighted value (average)** (2) (3) |
| **High-Quality Liquid Assets** | | |
| Total high-quality liquid assets (HQLA) | * | **204.3** |
| **Cash Outflows** | | |
| Retail deposits and deposits from small business customers, of which: | **238.4** | **16.1** |
| Stable deposits | **116.1** | **3.5** |
| Less stable deposits | **122.3** | **12.6** |
| Unsecured wholesale funding, of which: | **252.9** | **114.3** |
| Operational deposits (all counterparties) and deposits in networks of cooperative banks | **140.6** | **35.0** |
| Non-operational deposits (all counterparties) | **89.1** | **56.1** |
| Unsecured debt | **23.2** | **23.2** |
| Secured wholesale funding | **–** | **22.9** |
| Additional requirements, of which: | **203.7** | **39.5** |
| Outflows related to derivatives exposures and other collateral requirements | **21.3** | **6.6** |
| Outflows related to loss of funding on debt products | **2.9** | **2.9** |
| Credit and liquidity facilities | **179.5** | **30.0** |
| Other contractual funding obligations | **1.3** | **–** |
| Other contingent funding obligations | **477.0** | **9.3** |
| Total cash outflows | * | **202.1** |
| **Cash Inflows** | | |
| Secured lending (e.g., reverse repos) | **147.3** | **34.3** |
| Inflows from fully performing exposures | **10.8** | **5.9** |
| Other cash inflows | **10.7** | **10.7** |
| Total cash inflows | **168.8** | **50.9** |
| | | **Total adjusted value** (4) |
| Total HQLA | | **204.3** |
| Total net cash outflows | | **151.2** |
| Liquidity Coverage Ratio (%) | | **135** |
| For the quarter ended October 31, 2021 | | Total adjusted value (4) |
| Total HQLA | | 194.4 |
| Total net cash outflows | | 156.0 |
| Liquidity Coverage Ratio (%) | | 125 |

* Disclosure is not required under the LCR disclosure standard.
(1) Unweighted values are calculated at market value (for HQLA) or as outstanding balances maturing or callable within 30 days (for inflows and outflows).
(2) Values are calculated based on the simple average of the daily LCR over 63 business days in the fourth quarter of 2022.
(3) Weighted values are calculated after the application of the weightings prescribed under the OSFI Liquidity Adequacy Requirements (LAR) Guideline for HQLA and cash inflows and outflows.
(4) Adjusted values are calculated based on total weighted values after applicable caps, as defined in the LAR Guideline.

## Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is a regulatory metric that assesses the stability of a bank's funding profile in relation to the liquidity value of its assets and is calculated in accordance with the OSFI Liquidity Adequacy Requirements (LAR) Guideline. Unlike the LCR, which is a short-term metric, the NSFR assesses a bank's medium-term and long-term resilience. The NSFR is defined as the ratio of the amount of available stable funding (ASF) to the amount of required stable funding (RSF). ASF represents the proportion of own and third-party resources that are expected to be reliably available to a bank over a one-year time horizon (including customer deposits, long-term wholesale funding and capital). The stable funding requirements for each institution are set by OSFI based on the liquidity and maturity characteristics of its balance sheet assets and off-balance sheet exposures. Weightings prescribed by OSFI are applied to notional asset and liability balances to determine ASF, RSF and the NSFR. Canadian domestic systemically important banks (D-SIBs), including BMO, are required to maintain a minimum NSFR of 100%. BMO's NSFR was 114% as at October 31, 2022, indicating a surplus of $81 billion above the regulatory minimum. The NSFR decreased from 118% as at October 31, 2021, as higher required stable funding was partially offset by higher available stable funding.

| | For the quarter ended October 31, 2022 | | | | |
|---|---|---|---|---|---|
| | Unweighted value by residual maturity | | | | |
| (Canadian $ in billions, except as noted) | No maturity (1) | Less than 6 months | 6 to 12 months | Over 1 year | Weighted value (2) |
| **Available Stable Funding (ASF) Item** | | | | | |
| Capital: | – | – | – | 83.4 | 83.4 |
| Regulatory capital | – | – | – | 83.4 | 83.4 |
| Other capital instruments | – | – | – | – | – |
| Retail deposits and deposits from small business customers: | 210.0 | 33.2 | 24.8 | 42.3 | 285.7 |
| Stable deposits | 105.5 | 14.9 | 9.0 | 7.8 | 130.8 |
| Less stable deposits | 104.5 | 18.3 | 15.8 | 34.5 | 154.9 |
| Wholesale funding: | 253.4 | 197.9 | 56.9 | 90.5 | 236.7 |
| Operational deposits | 144.0 | 0.2 | – | – | 72.1 |
| Other wholesale funding | 109.4 | 197.7 | 56.9 | 90.5 | 164.6 |
| Liabilities with matching interdependent assets | – | 1.6 | 2.1 | 11.8 | – |
| Other liabilities: | 5.3 | 67.7 | * | * | 4.4 |
| NSFR derivative liabilities | * | * | * | – | * |
| All other liabilities and equity not included in the above categories | 5.3 | 44.9 | 0.1 | 4.3 | 4.4 |
| Total ASF | * | * | * | * | 610.2 |
| **Required Stable Funding (RSF) Item** | | | | | |
| Total NSFR high-quality liquid assets (HQLA) | * | * | * | * | 12.6 |
| Deposits held at other financial institutions for operational purposes | – | – | – | – | – |
| Performing loans and securities: | 180.3 | 137.0 | 51.8 | 311.5 | 459.5 |
| Performing loans to financial institutions secured by Level 1 HQLA | – | 41.3 | 2.5 | – | 3.3 |
| Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions | 37.8 | 57.3 | 4.7 | 15.7 | 62.6 |
| Performing loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and public sector entities, of which: | 101.8 | 29.1 | 31.7 | 156.8 | 246.6 |
| With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk | – | – | – | – | – |
| Performing residential mortgages, of which: | 13.3 | 6.9 | 12.6 | 125.2 | 110.6 |
| With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk | 13.3 | 6.7 | 12.4 | 120.7 | 106.6 |
| Securities that are not in default and do not qualify as HQLA, including exchange-traded equities | 27.4 | 2.4 | 0.3 | 13.8 | 36.4 |
| Assets with matching interdependent liabilities | – | 1.6 | 2.1 | 11.8 | – |
| Other assets: | 11.0 | * | * | 44.2 | 43.2 |
| Physical traded commodities, including gold | 3.4 | * | * | * | 2.9 |
| Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs | * | * | * | 11.4 | 9.7 |
| NSFR derivative assets | * | * | * | 9.8 | – |
| NSFR derivative liabilities before deduction of variation margin posted | * | * | * | 1.5 | 1.5 |
| All other assets not included in the above categories | 7.6 | 1.4 | 0.1 | 20.0 | 29.1 |
| Off-balance sheet items | – | – | – | 537.0 | 18.8 |
| Total RSF | * | * | * | * | 534.1 |
| Net Stable Funding Ratio (%) | * | * | * | * | 114 |

| For the quarter ended October 31, 2021 | Weighted value (2) |
|---|---|
| Total ASF | 535.2 |
| Total RSF | 453.4 |
| Net Stable Funding Ratio (%) | 118 |

* Disclosure is not required under the NSFR disclosure standard.

(1) Items reported in the "no maturity" column do not have a stated maturity. These may include, but are not limited to, items such as non-maturity deposits, short positions, open maturity positions, non-HQLA equities, physical traded commodities and demand loans.

(2) Weighted values are calculated after the application of the weights prescribed under the OSFI LAR Guideline for ASF and RSF.

## Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments

The tables below show the remaining contractual maturities of on-balance sheet assets and liabilities and off-balance sheet commitments. The contractual maturity of financial assets and liabilities is an input to, but is not necessarily consistent with, the expected maturity of assets and liabilities that is used in the management of liquidity and funding risk. We forecast asset and liability cash flows, under both normal market conditions and a number of stress scenarios, to manage liquidity and funding risk. Stress scenarios include assumptions for loan repayments, deposit withdrawals, and credit commitment and liquidity facility drawdowns by counterparty and product type. Stress scenarios also consider the time horizon over which liquid assets can be monetized and the related discounts ("haircuts") and potential collateral requirements that may result from both market volatility and credit rating downgrades, among other assumptions.

| | | | | | | | | | | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| (Canadian $ in millions) | 0 to 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 to 2 years | 2 to 5 years | Over 5 years | No maturity | Total |
| **On-Balance Sheet Financial Instruments** | | | | | | | | | | |
| **Assets** | | | | | | | | | | |
| Cash and cash equivalents | 86,003 | – | – | – | – | – | – | – | 1,463 | 87,466 |
| Interest bearing deposits with banks | 3,844 | 1,662 | 86 | 44 | 98 | – | – | – | – | 5,734 |
| Securities | 4,189 | 4,284 | 5,480 | 5,375 | 6,060 | 18,272 | 68,521 | 108,072 | 53,009 | 273,262 |
| Securities borrowed or purchased under resale agreements | 83,861 | 21,736 | 5,101 | 2,448 | 48 | – | – | – | – | 113,194 |
| Loans (1) | | | | | | | | | | |
| Residential mortgages | 526 | 1,519 | 3,708 | 5,778 | 6,501 | 14,665 | 105,285 | 10,810 | 88 | 148,880 |
| Consumer instalment and other personal | 211 | 553 | 940 | 1,693 | 1,537 | 4,844 | 37,742 | 14,084 | 24,499 | 86,103 |
| Credit cards | – | – | – | – | – | – | – | – | 9,663 | 9,663 |
| Business and government | 13,003 | 9,595 | 11,724 | 9,300 | 11,394 | 37,250 | 105,009 | 17,776 | 94,259 | 309,310 |
| Allowance for credit losses | – | – | – | – | – | – | – | – | (2,617) | (2,617) |
| Total loans, net of allowance | 13,740 | 11,667 | 16,372 | 16,771 | 19,432 | 56,759 | 248,036 | 42,670 | 125,892 | 551,339 |
| Other Assets | | | | | | | | | | |
| Derivative instruments | 5,362 | 7,147 | 3,359 | 2,552 | 2,225 | 7,787 | 11,636 | 8,092 | – | 48,160 |
| Customers' liabilities under acceptances | 9,752 | 3,461 | 19 | 3 | – | – | – | – | – | 13,235 |
| Other | 2,735 | 625 | 225 | 21 | 2 | 10 | 19 | 5,817 | 37,355 | 46,809 |
| Total other assets | 17,849 | 11,233 | 3,603 | 2,576 | 2,227 | 7,797 | 11,655 | 13,909 | 37,355 | 108,204 |
| Total Assets | 209,486 | 50,582 | 30,642 | 27,214 | 27,865 | 82,828 | 328,212 | 164,651 | 217,719 | 1,139,199 |

| | | | | | | | | | | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| (Canadian $ in millions) | 0 to 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 to 2 years | 2 to 5 years | Over 5 years | No maturity | Total |
| **Liabilities and Equity** | | | | | | | | | | |
| Deposits (2) (3) | 38,064 | 44,637 | 49,626 | 47,908 | 48,444 | 39,992 | 62,978 | 16,265 | 421,564 | 769,478 |
| Other liabilities | | | | | | | | | | |
| Derivative instruments | 3,370 | 11,764 | 4,399 | 3,814 | 2,895 | 7,619 | 14,092 | 12,003 | – | 59,956 |
| Acceptances | 9,752 | 3,461 | 19 | 3 | – | – | – | – | – | 13,235 |
| Securities sold but not yet purchased (4) | 40,979 | – | – | – | – | – | – | – | – | 40,979 |
| Securities lent or sold under repurchase agreements (4) | 94,215 | 6,476 | 1,046 | 2,226 | – | – | – | – | – | 103,963 |
| Securitization and liabilities related to structured entities | 14 | 2,803 | 1,300 | 794 | 1,673 | 5,136 | 9,342 | 6,006 | – | 27,068 |
| Other | 12,143 | 4,980 | 101 | 97 | 146 | 872 | 2,558 | 5,722 | 18,713 | 45,332 |
| Total other liabilities | 160,473 | 29,484 | 6,865 | 6,934 | 4,714 | 13,627 | 25,992 | 23,731 | 18,713 | 290,533 |
| Subordinated debt | – | – | – | – | – | – | 25 | 8,125 | – | 8,150 |
| Total Equity | – | – | – | – | – | – | – | – | 71,038 | 71,038 |
| Total Liabilities and Equity | 198,537 | 74,121 | 56,491 | 54,842 | 53,158 | 53,619 | 88,995 | 48,121 | 511,315 | 1,139,199 |

(1) Loans receivable on demand have been included under no maturity.
(2) Deposits payable on demand and payable after notice have been included under no maturity.
(3) Deposits totalling $29,966 million as at October 31, 2022 have a fixed maturity date; however, they can be redeemed early (either fully or partially) by customers without penalty. These are classified as payable on a fixed date due to their stated contractual maturity date.
(4) Presented based on their earliest maturity date.

| | | | | | | | | | | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| (Canadian $ in millions) | 0 to 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 to 2 years | 2 to 5 years | Over 5 years | No maturity | Total |
| **Off-Balance Sheet Commitments** | | | | | | | | | | |
| Commitments to extend credit (1) | 1,932 | 3,610 | 10,461 | 13,373 | 14,753 | 38,057 | 119,430 | 5,490 | – | 207,106 |
| Letters of credit (2) | 1,680 | 4,601 | 4,936 | 4,662 | 4,922 | 2,832 | 3,680 | 57 | – | 27,370 |
| Backstop liquidity facilities | – | 585 | 393 | 1,438 | 1,275 | 3,465 | 9,189 | 985 | – | 17,330 |
| Leases | – | – | – | – | – | 3 | 44 | 256 | – | 303 |
| Securities lending | – | – | – | – | – | – | – | – | – | – |
| Purchase obligations | 27 | 98 | 55 | 55 | 58 | 217 | 309 | 22 | – | 841 |

(1) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at BMO's discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.
(2) Letters of credit can be drawn down at any time. These are classified based on their stated contractual maturity date.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

MD&A

| (Canadian $ in millions) | 0 to 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 to 2 years | 2 to 5 years | Over 5 years | No maturity | Total 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| **On-Balance Sheet Financial Instruments** | | | | | | | | | | |
| **Assets** | | | | | | | | | | |
| Cash and cash equivalents | 91,736 | – | – | – | – | – | – | – | 1,525 | 93,261 |
| Interest bearing deposits with banks | 3,529 | 1,440 | 1,172 | 1,753 | 409 | – | – | – | – | 8,303 |
| Securities | 5,286 | 4,742 | 5,116 | 3,383 | 2,692 | 17,512 | 43,571 | 90,225 | 60,322 | 232,849 |
| Securities borrowed or purchased under resale agreements | 70,080 | 22,873 | 11,362 | 1,602 | 766 | 699 | – | – | – | 107,382 |
| Loans (1) | | | | | | | | | | |
| Residential mortgages | 458 | 1,081 | 2,109 | 4,373 | 4,879 | 22,170 | 91,146 | 9,396 | 138 | 135,750 |
| Consumer instalment and other personal | 215 | 419 | 639 | 1,166 | 1,110 | 5,732 | 31,613 | 13,518 | 22,752 | 77,164 |
| Credit cards | – | – | – | – | – | – | – | – | 8,103 | 8,103 |
| Business and government | 12,082 | 7,667 | 7,697 | 10,496 | 10,213 | 29,303 | 81,377 | 14,413 | 66,561 | 239,809 |
| Allowance for credit losses | – | – | – | – | – | – | – | – | (2,564) | (2,564) |
| Total loans, net of allowance | 12,755 | 9,167 | 10,445 | 16,035 | 16,202 | 57,205 | 204,136 | 37,327 | 94,990 | 458,262 |
| Other Assets | | | | | | | | | | |
| Derivative instruments | 2,752 | 4,924 | 2,187 | 1,809 | 1,634 | 7,525 | 8,787 | 7,095 | – | 36,713 |
| Customers' liabilities under acceptances | 11,574 | 2,428 | 19 | – | – | – | – | – | – | 14,021 |
| Other | 2,002 | 461 | 140 | 4 | 3 | 5 | 1 | 5,097 | 29,671 | 37,384 |
| Total other assets | 16,328 | 7,813 | 2,346 | 1,813 | 1,637 | 7,530 | 8,788 | 12,192 | 29,671 | 88,118 |
| Total Assets | 199,714 | 46,035 | 30,441 | 24,586 | 21,706 | 82,946 | 256,495 | 139,744 | 186,508 | 988,175 |

| (Canadian $ in millions) | 0 to 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 to 2 years | 2 to 5 years | Over 5 years | No maturity | Total 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Liabilities and Equity** | | | | | | | | | | |
| Deposits (2) (3) | 29,885 | 37,841 | 42,488 | 28,857 | 24,299 | 33,778 | 45,729 | 19,925 | 422,829 | 685,631 |
| Other liabilities | | | | | | | | | | |
| Derivative instruments | 2,771 | 3,651 | 2,379 | 1,508 | 1,444 | 5,723 | 7,140 | 6,199 | – | 30,815 |
| Acceptances | 11,574 | 2,428 | 19 | – | – | – | – | – | – | 14,021 |
| Securities sold but not yet purchased (4) | 32,073 | – | – | – | – | – | – | – | – | 32,073 |
| Securities lent or sold under repurchase agreements (4) | 73,190 | 17,199 | 3,994 | 3,103 | 70 | – | – | – | – | 97,556 |
| Securitization and liabilities related to structured entities | 21 | 1,737 | 1,527 | 648 | 486 | 7,240 | 9,791 | 4,036 | – | 25,486 |
| Other | 10,121 | 1,632 | 116 | 109 | 162 | 944 | 1,277 | 3,509 | 20,307 | 38,177 |
| Total other liabilities | 129,750 | 26,647 | 8,035 | 5,368 | 2,162 | 13,907 | 18,208 | 13,744 | 20,307 | 238,128 |
| Subordinated debt | – | – | – | – | – | – | 25 | 6,868 | – | 6,893 |
| Total Equity | – | – | – | – | – | – | – | – | 57,523 | 57,523 |
| Total Liabilities and Equity | 159,635 | 64,488 | 50,523 | 34,225 | 26,461 | 47,685 | 63,962 | 40,537 | 500,659 | 988,175 |

(1) Loans receivable on demand have been included under no maturity.
(2) Deposits payable on demand and payable after notice have been included under no maturity.
(3) Deposits totalling $20,991 million as at October 31, 2021 have a fixed maturity date; however, they can be redeemed early (either fully or partially) by customers without penalty. These are classified as payable on a fixed date due to their stated contractual maturity date.
(4) Presented based on their earliest maturity date.

| (Canadian $ in millions) | 0 to 1 month | 1 to 3 months | 3 to 6 months | 6 to 9 months | 9 to 12 months | 1 to 2 years | 2 to 5 years | Over 5 years | No maturity | Total 2021 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Off-Balance Sheet Commitments** | | | | | | | | | | |
| Commitments to extend credit (1) | 1,674 | 4,935 | 8,374 | 13,308 | 14,498 | 33,749 | 99,639 | 4,571 | – | 180,748 |
| Letters of credit (2) | 1,196 | 4,083 | 4,358 | 3,815 | 4,806 | 1,980 | 3,304 | 104 | – | 23,646 |
| Backstop liquidity facilities | 189 | 137 | 293 | 1,073 | 1,578 | 2,709 | 6,088 | 828 | – | 12,895 |
| Leases | – | – | – | – | 1 | 3 | 22 | 222 | – | 248 |
| Securities lending | 3,909 | – | – | – | – | – | – | – | – | 3,909 |
| Purchase obligations | 16 | 38 | 47 | 44 | 60 | 139 | 217 | 41 | – | 602 |

(1) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at BMO's discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.
(2) Letters of credit can be drawn down at any time. These are classified based on their stated contractual maturity date.

**Caution**

This Liquidity and Funding Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Material presented in a blue-tinted font above is an integral part of Note 5 of the 2022 audited annual consolidated financial statements.

# Operational Non-Financial Risk

**Operational non-financial risk** encompasses a wide range of non-financial risks, including those related to business change, customer trust, reputation and data, all of which can result in financial loss. These losses can stem from inadequate or failed internal processes or systems, human error or misconduct, and external events that may directly or indirectly impact the fair value of assets we hold in our credit or investment portfolios. Examples of these risks include cyber and cloud security risk, technology risk, fraud risk, business continuity risk and human resources risk, but exclude legal and regulatory risk, credit risk, market risk, liquidity risk and other types of financial risk.

Operational non-financial risk (ONFR) is inherent in all of our business and banking activities and can lead to significant impacts on our operating and financial results, including financial loss, restatements of financial results and damage to BMO's reputation. Like other financial services organizations that operate in multiple jurisdictions, we are exposed to a variety of operational risks arising from the potential for failures of our internal processes, technology systems and employees, as well as from external threats. Potential losses may be the result of process and control failures, theft and fraud, unauthorized transactions by employees, business disruption, information security breaches, cybersecurity threats, exposure to risks related to third-party relationships, and damage to physical assets. Given the large volume of transactions that we process on a daily basis, and the complexity and speed of our business operations, there is a possibility that certain operational or human errors may be repeated or compounded before they are discovered and rectified.

Operational non-financial risk is not only inherent in our business and banking activities, it is also inherent in the processes and controls we use to manage risks. There is the possibility that errors could occur, as well as the possibility that a failure in our internal processes or systems could lead to financial loss and reputational harm. Shortcomings or failures of internal processes, systems or employees, or of services and products provided by third parties, including any of our financial, accounting or other data processing systems, could lead to financial loss, restatements of financial results and damage to BMO's reputation.

The nature of our business activities also exposes us to the risk of theft and fraud when we enter into credit transactions with customers or counterparties. In extending credit, BMO relies on the accuracy and completeness of any information provided by, and any other representations made by, customers and counterparties. While we conduct due diligence in relation to such customer information and, where practicable and economically feasible, engage valuation experts and other experts or sources of information to assist in assessing the value of collateral and other customer risks, our financial results may be adversely impacted if the information provided by customers or counterparties is materially misleading and this is not discovered during the due diligence process.

We have established various risk management frameworks to manage and mitigate these risks, including internal controls, limits and governance processes. However, despite the contingency plans we have in place to maintain our ability to serve our clients and minimize disruptions and adverse impacts, and the contingency plans of our third-party service providers, our ability to conduct business may be adversely affected by a disruption to the infrastructure that supports our operations and the communities in which we do business, including, but not limited to, disruption caused by public health emergencies or terrorist acts.

We regularly review top and emerging risk exposures that could impact BMO's business and operations, and we assess our preparedness to proactively manage the risks we face or could face in the future. Consistent with the management of risk across the enterprise, we employ a three-lines-of-defence approach in managing our exposures to non-financial risk.

Refer to the Top and Emerging Risks That May Affect Future Results section for further discussion of these and other risks.

## Operational Non-Financial Risk Governance

The Enterprise Operational Risk Committee (EORC), a sub-committee of the Risk Management Committee (RMC), is the primary governance committee exercising oversight of all operational non-financial risk management matters, including: providing direction on, and monitoring against, strategic objectives and deliverables; improving operational resilience; and helping ensure that BMO maintains its reputation for preventing avoidable operating failures and mistakes. As part of its governance responsibilities, the EORC reviews and recommends corporate policies and standards to the Board and senior executives for review and approval as required, as well as the methodologies and tools that comprise the governing principles of the Operational Non-Financial Risk Management Framework (ONFRMF). The documentation that gives effect to these governing principles is reviewed on a regular basis in order to confirm that it incorporates sound governance practices and is consistent with BMO's risk appetite. Regular analysis and reporting of our enterprise operational risk profile to the various committees (EORC, RMC and Risk Review Committee (RRC)) are important elements of our risk governance framework. Enterprise operational risk reporting provides an integrated view of top and emerging risks, trends in loss data, capital consumption, key risk indicators and operating group profiles. We continue to invest in our reporting platforms to support timely and comprehensive reporting capabilities in order to enhance risk transparency and facilitate the proactive management of operational risk exposures.

## Operational Non-Financial Risk Management

As the first line of defence, the operating groups and Corporate Services, including Technology and Operations, are accountable for the day-to-day management of non-financial risk, including the Chief Risk Officers of our businesses, who provide governance and oversight for their respective business units, along with Corporate Services, which provides additional governance and oversight in certain targeted areas. Independent risk management oversight is provided by the Operational Non-Financial Risk Management (ONFRM) team, which is responsible for ONFR strategy, tools and policies, and for exercising second-line oversight, effective challenge and governance. ONFRM establishes and maintains the ONFRMF, which defines the processes to be used by the first line of defence to identify, assess, manage, mitigate, monitor and report on key operational risk exposures, losses and near-miss operational risk events with significant potential impact. In addition, the ONFRMF defines the processes by which ONFRM, as the second line of defence, guides, supports, monitors, assesses and communicates with the first line in its management of operational non-financial risks. Operational Risk Officers within ONFRM independently assess group operational risk profiles, identify material exposures and potential weaknesses in processes and controls, and recommend appropriate mitigation strategies and actions. Implementing the governing principles of the ONFRMF also involves continuing to strengthen our risk culture by promoting greater awareness and understanding of non-financial risk across all three lines of defence, learning from loss events and near-misses, and providing related training and communication, as well as day-to-day execution and oversight of the ONFRMF. We also continue to strengthen our second-line-of-defence support and oversight capabilities with an enhanced Operational Non-Financial Risk Operating Model, which takes a differentiated approach based on the nature of the underlying risk and existing organizational structures.

Through the implementation and oversight of the ONFRMF, we seek to maintain an operational risk profile that is not only consistent with our risk appetite and supported by adequate capital, but is also reinforced by enhanced operational resilience. Operational resilience is an organization's ability to protect and sustain core business services that are key for its clients, both during the normal course of business and when experiencing operational stress or disruption. It involves our ability to deal with unpredictable events and adapt to changes in external circumstances. Operational resilience is not a defensive strategy, it is a positive, forward-looking strategic posture that allows us to take measured risks with confidence and prepare BMO to withstand challenges in the market arising from both expected and unexpected events.

The following are the key programs, methodologies and processes set out in the ONFRMF that assist us in the ongoing review of our operational risk profile:

- **Risk Control Self-Assessment** is an established process which is evolving into the Product/Service and Process Risk Assessment program in 2023-2024. This new Product/Service and Process Risk Assessment program will be used by our operating groups and Corporate Service areas to assess the controls and residual exposures to risk in their business operations by focusing on the key controls they have in place to address specific material risks associated with their products, services, internal activities and processes. It provides a forward-looking view of the impact of the business environment and internal controls on the risk profiles of our operating groups and Corporate Service areas, supporting the proactive prevention, mitigation and management of risk.
- BMO's **Initiative Assessment and Approval Process (IAAP)** is used to assess, document and approve qualifying initiatives when a new business, service or product is developed, or existing services and products are enhanced. This process supports continuous oversight of changes in risk by setting out specific requirements for due diligence, approval, monitoring and reporting that apply at all levels of the organization.
- Material trends, metrics and risk assessments comprising **Key Risk Indicators, Issues Management** and **Internal Loss Data Events** are integral components of the operational risk profile and are utilized to assess specific risk exposures in relation to BMO's overall risk appetite.
- **Stress testing** assesses the potential impact of severe negative events on key risks and critical business processes in order to inform risk management. Stress testing helps management identify and understand the impact of large-scale events, including events that have a low frequency of occurrence but a high severity of impact, as well as environmental stresses, and develop mitigation measures or controls that aim to help manage tail risk.
- Effective **business continuity management** prepares us to recover, maintain and manage critical operations and processes, as well as safeguard the interests and well-being of our customers, shareholders and employees, in the event of a business disruption, thereby minimizing any adverse effects on our customers and other stakeholders. We have established a framework that facilitates the rapid recovery and timely resumption of critical operations. Our comprehensive business continuity management strategy involves developing, testing and maintaining effective recovery strategies and plans so that critical processes and third-party arrangements remain viable.
- BMO's **Corporate Risk & Insurance team** provides a second layer of mitigation for certain operational risk exposures. We purchase insurance when required by law, regulation or contractual agreement, and when it is economically attractive and practicable to mitigate our risks, in order to provide adequate protection against unexpected material loss.

The following are examples of ONFR that may adversely affect BMO's business and financial results. For more information, refer to the Top and Emerging Risks That May Affect Future Results section.

**Cyber and Cloud Security Risk**
Cyber and cloud security is integral to BMO's business activities, brand and reputation. As technology evolves rapidly and the connective capabilities of digital devices grow, cyber threats and risks also evolve. These threats and risks include: breaches of, or disruptions to, our systems or operations, as well as unauthorized access, use or dissemination of information pertaining to BMO, our customers or employees. Refer to the Risks That May Affect Future Results section for further information.

**Technology Risk**
Technology is a key enabler of BMO's critical business products and services delivery. Thus, failure to maintain and invest in technology can lead to operational disruption (e.g., prolonged slowdown or outage of critical systems or business services) and impede the achievement of strategic organizational goals, at significant financial cost. Technology risk management activities are intended to protect BMO's systems, data and assets, and aim to ensure their confidentiality, integrity and availability. As the adoption of digital banking continues to grow, we continue to invest in innovative new enhancements of our technological capabilities in order to meet our customers' expectations and keep their data secure.

**Data and Analytics Risks**
BMO continues to invest in new digital and analytics capabilities in support of the enterprise Digital First goals. Our ability to effectively manage and safeguard our data assets has a direct impact on our digital processes and our ability to develop and introduce innovative new analytics capabilities with tools and systems driven by artificial intelligence (AI). Our management of data risks is focused on the quality, resilience, retention and governance of BMO's data assets, which are foundational to our business operations. Our management of analytics risks focuses on BMO's commitment to fair and ethical use of AI tools and systems, in compliance with all regulatory expectations.

**Third-Party Risk**

We continue to use third parties to gain rapid access to new technologies, increase efficiencies, and improve competitiveness and performance. This increases our reliance on third parties and sub-contractors to effectively deliver products and services to our customers, and exposes us to the risk of business disruption and financial loss arising from the breakdown of processes and controls at third parties and their sub-contractors. To manage this risk, we have in place a robust third-party risk management framework designed to identify, assess, manage, monitor, mitigate and report on risks arising from the use of third parties through all stages of the third-party life cycle, in line with our organizational strategy and risk appetite. We continue to enhance our third-party risk management capabilities in order to help maintain robust risk management, operational resilience and compliance with relevant regulatory requirements. This includes monitoring and assessing the anticipated impact of pending regulatory changes to B-10 – *Third-Party Risk Management*, to be announced by the Office of the Superintendent of Financial Institutions (OSFI).

**Anti-Money Laundering**

Compliance with all Anti-Money Laundering, Anti-Terrorist Financing (AML/ATF) and sanctions measures is an integral part of safeguarding BMO, our customers and the communities in which we operate. We are committed to managing AML/ATF and sanctions risks effectively, and complying with all relevant laws and regulations. Risks related to non-compliance with these requirements can include enforcement action, criminal prosecution, legal action and damage to our reputation. Under the direction of the Chief Anti-Money Laundering Officer (CAMLO), BMO's AML/ATF and sanctions compliance program promotes effective governance and oversight across all of our businesses, and establishes policies, risk assessments and training, including mandatory annual training for all employees. BMO's AML/ATF and sanctions compliance program applies analytics, technology and professional expertise in order to deter, detect and report suspicious activity. The CAMLO regularly reports to the Audit and Conduct Review Committee (ACRC) of the Board of Directors and to senior management on the effectiveness of the AML compliance program. Continuing amendments to Canada's AML/ATF regulations, including the amended regulations that came into effect in June 2021, are intended to improve the effectiveness of Canada's AML/ATF regime and further align it with international standards. In addition, we continue to comply with the ongoing sanctions arising from Russia's invasion of Ukraine in February 2022. We remain committed to effective compliance and the ongoing effort to protect the financial system and the communities in which we operate.

## Non-Financial Risk Measurement

Effective November 1, 2019, OSFI permitted BMO, along with other AMA-approved banks, to use the Basel II Standardized Approach for determining regulatory capital requirements for enterprise operational risk prior to implementation of the new Standardized Measurement Approach, as part of the final Basel III reforms. We expect to transition to the new Basel III Standardized Measurement Approach for regulatory capital reporting effective February 2023.

## Model Risk

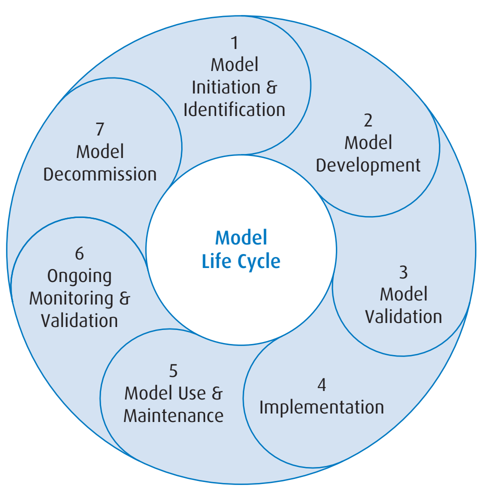
**Model risk** is the potential for adverse consequences resulting from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making and damage to reputation.

Model risk arises from the use of quantitative analytical tools that apply statistical, mathematical, economic, algorithmic or other advanced techniques, such as artificial intelligence (AI) and machine learning (ML), to process input data and generate quantitative estimates. These analytical tools range from very simple models that produce straightforward estimates to highly sophisticated models that value complex transactions or generate a broad range of forward-looking estimates. These models generate results that are used to inform business, risk and capital management decision-making, and to assist in making daily lending, trading, underwriting, funding, investment and operational decisions.

These quantitative analytical tools provide important insights and are effective when used within a framework that identifies key assumptions and limitations, while controlling and mitigating model risk. In addition to applying judgment to evaluate the reliability of model results, we mitigate model risk by maintaining strong controls over the development, validation, implementation and use of all models across the enterprise. We also seek to ensure that qualitative model overlays and non-statistical approaches to evaluating risks are intuitive, experience-based, well-documented and subject to effective challenge by those with sufficient expertise and knowledge, in order to deliver reasonable results.

**Model Risk Management Framework**

Risk is inherent in models because model results are estimates which rely on statistical, mathematical or other quantitative techniques that approximate reality to transform data into estimates or forecasts of future outcomes. Model risk also arises from the potential for misuse of models or model results. Model risk is governed at BMO by the enterprise-wide Model Risk Management Framework.



The Model Risk Management Framework sets out an end-to-end approach for model risk governance across the model life cycle and for managing model risk within the limits of our risk appetite. The framework includes BMO's Model Risk Corporate Policy, Model Risk Guidelines and supporting operating procedures, which outline explicit principles for managing model risk, detail model risk management processes, and define the roles and responsibilities of all stakeholders across the model life cycle. Model owners, developers and users serve as the first line of defence, while the Model Risk group is the second line of defence, and the Corporate Audit Division is the third line of defence.

Our Model Risk group is responsible for developing and maintaining a risk-based Model Risk Management Framework that aligns with regulatory expectations, as well as for exercising oversight of the effectiveness of model processes, model inventory and the overall aggregation, assessment and reporting of model risk. This framework incorporates guidance on the management of risks arising from advances in automated decision-making, such as algorithmic trading, as well as AI and ML. Our Model Risk Management Committee (MRMC), a sub-committee of the RMC, is a cross-functional group representing all key stakeholders across the enterprise. The MRMC meets regularly to help direct BMO's use of models, to oversee the development, implementation and maintenance of the Model Risk Management Framework, to provide effective challenge and to discuss governance of the enterprise's models.

**Outcomes Analysis and Back-Testing**

Once models are validated, approved and in use, they are subject to ongoing monitoring, including outcomes analysis, at varying frequencies. As a key component of outcomes analysis, back-testing compares model results against actual observed outcomes. Variances between model forecasts and actual observed outcomes are measured against defined risk materiality thresholds and tolerance ranges, which may result in actions such as model review and parameter recalibration, as appropriate. This analysis serves to confirm the validity of a model's performance over time. Controls are in place to address identified issues and enhance our models' overall performance.

All models used within BMO, including models that incorporate AI and ML techniques, are subject to validation and ongoing monitoring to confirm that they are being used in accordance with our framework and in alignment with regulatory expectations, such as those related to ethics, privacy, fairness and explainability. This framework applies to a wide variety of models, ranging from market, credit and non-financial risk models to stress testing, pricing and valuation, and anti-money laundering models.

**Caution**

This Operational Non-Financial Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

## Legal and Regulatory Risk

**Legal and regulatory risk** is the potential for loss or harm resulting from failure to comply with laws or satisfy contractual obligations or regulatory requirements. This includes the risk arising from any failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legal or regulatory requirements; enforce or comply with contractual terms; assert non-contractual rights; effectively manage disputes; or act in a manner so as to maintain our reputation.

The success of BMO's business relies in part on our ability to manage our exposure to legal and regulatory risk. The financial services industry is highly regulated and subject to strict enforcement of legal and regulatory requirements. Banks globally continue to be subject to fines and other penalties for a number of regulatory and conduct issues, and we are exposed to risks in connection with regulatory and governmental inquiries, investigations and enforcement actions, and criminal prosecutions. As rulemaking and supervisory expectations continue to evolve, we monitor developments to enable BMO to respond by implementing changes as required.

Under the direction of BMO's General Counsel, our Legal & Regulatory Compliance group maintains enterprise-wide frameworks that set out the steps to be taken to identify, assess, manage, monitor and report on legal and regulatory issues. We identify applicable laws and regulations and potential risks, recommend mitigation measures and strategies, conduct internal investigations, and oversee legal proceedings and enforcement actions, including civil claims and litigation, criminal charges, and regulatory examinations and audits.

Heightened regulatory and supervisory scrutiny has a significant impact on the way we conduct business. Working with the operating groups and Corporate Services, including Technology and Operations, Legal & Regulatory Compliance assesses and analyzes the implications of regulatory and supervisory changes. We devote substantial resources to the implementation of systems and processes required to comply with new regulations, which may also help us meet the needs and demands of our customers. Failure to comply with applicable legal and regulatory requirements may result in legal proceedings, financial losses, regulatory sanctions, enforcement actions, criminal convictions and penalties, an inability to execute our business strategies, a decline in investor and customer confidence, and damage to our reputation. Certain businesses are also subject to fiduciary requirements, including policies and practices that address the responsibilities of a business to a customer, such as service requirements and expectations, customer suitability determinations, disclosure obligations and communications.

BMO is subject to legal proceedings, including investigations by regulators, arising in the ordinary course of business, and the unfavourable resolution of any such legal proceedings could have a material adverse effect on our business, financial condition, results of operations, cash flows, capital position or credit ratings; require material changes in our operations; result in loss of customers; and damage our reputation. The volume of legal proceedings and the amount of damages and penalties assessed in such legal proceedings could grow in the future. Information regarding material legal proceedings to which we are a party is included in the Legal Proceedings section in Note 24 of the consolidated financial statements. Our disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management on a timely basis, so that appropriate decisions can be made regarding public disclosure. In assessing the materiality of legal proceedings, factors considered include a case-by-case assessment of specific facts and circumstances, our past experience and the opinions of legal experts. However, some legal proceedings may be highly complex, and may include novel or untested legal claims or theories. The outcome of such proceedings may be difficult to anticipate until late in the proceedings, which may last several years.

Safeguarding our customers, employees, information and assets from exposure to criminal risk is an important priority. Criminal risk is the potential for loss or harm resulting from failure to comply with criminal laws, which could include acts by employees against BMO, acts by external parties against BMO and acts by external parties using BMO to engage in unlawful conduct, such as fraud, theft, money laundering, violence, cyber-crime, bribery and corruption.

BMO's Anti-Corruption Office, through its global program, has articulated key principles and procedures necessary for the effective oversight of compliance with anti-corruption legislation in the jurisdictions in which we operate. These include guidance on both identifying and avoiding corrupt practices and rigorously investigating allegations of corrupt activity.

Governments and regulators around the world continue to focus on anti-money laundering and related concerns, raising their expectations concerning the quality and efficacy of anti-money laundering programs and penalizing institutions that fail to meet these expectations. Under the direction of the Chief Anti-Money Laundering Officer (CAMLO), BMO's Anti-Money Laundering Office is responsible for the governance, oversight and assessment of the principles and procedures designed to help ensure compliance with laws and regulations and internal risk parameters related to anti-money laundering, anti-terrorist financing and sanctions measures. For additional discussion regarding BMO's risk management practices with respect to anti-money laundering measures, refer to the Anti-Money Laundering section.

We recognize that our business is built on BMO's reputation for good conduct. In recognition of this, we have adopted a wide range of practices in addition to BMO's Code of Conduct to support the ethical conduct of our employees. BMO's Ethical Culture and Conduct Framework sets out our approach to managing and mitigating potential misconduct. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Similar to our approach to other non-financial risks, this framework is supported by our Enterprise-Wide Risk Management Framework and our focus on maintaining a strong risk culture. For further discussion, refer to the Risk Culture section.

All of these frameworks reflect the three-lines-of-defence operating model described previously. The operating groups and Corporate Services, including Technology and Operations, manage day-to-day risks by complying with corporate policies and standards, while Legal & Regulatory Compliance units specifically aligned with each of the operating groups provide advice and independent legal and regulatory risk management oversight.

We continue to respond to other global regulatory developments, including capital and liquidity requirements. These developments include consumer protection measures and specific financial reforms, including proposed reforms in respect of the assessment, management and disclosure of climate-related financial risk, which are discussed in further detail below. For additional discussion of regulatory developments relating to capital management and liquidity and funding risk, refer to the Enterprise-Wide Capital Management section and the Liquidity and Funding Risk section. For a discussion of the impact of certain other regulatory developments, refer to: Critical Accounting Estimates and Judgments – Income Taxes and Deferred Tax Assets; Tax Legislation and Interpretations; Fiscal and Monetary Policies and Other Economic Conditions in the Countries in which BMO Conducts Business; and Benchmark Interest Rate Reform.

**Consumer and Investor Protection** – Regulators around the world continue to focus on consumer protection measures, including with respect to seniors and other vulnerable customers, interactions with consumers, and standards of conduct for individuals in the financial services industry. In Canada, these measures have included amending the *Bank Act* to implement the Financial Consumer Protection Framework (FCPF) and amending the *Financial Consumer Agency of Canada Act* to strengthen the mandate and powers of the Financial Consumer Agency of Canada. Key features of the FCPF include the introduction of responsible business conduct obligations, such as prohibited conduct and obtaining express consent, cooling-off periods for certain consumer agreements, stricter complaint management and whistleblowing requirements, implementation of an appropriateness requirement for the sale of banking products to retail customers, and enhanced disclosure requirements. BMO implemented the FCPF on June 30, 2022. In addition, reforms to the Canadian securities regulatory regime related to the protection of investors are also proceeding. Canadian securities regulatory reforms include plans to: consolidate the Mutual Fund Dealers Association of Canada (MFDA) and the Investment Industry Regulatory Organization of Canada (IIROC) into a single self-regulatory organization and combine the two investor protection funds, and harmonize and enhance the reporting of ongoing costs, including embedded fees, of owning investment funds and segregated funds under joint proposals by the Canadian Securities Administrators (CSA) and Canadian Council of Insurance Regulators. Regulators also plan to monitor and assess the impacts of the client-focused reforms, the final stage of which came into effect on December 31, 2021. In the United States, banking regulators have a heightened focus, with respect to all consumer products, on matters pertaining to racial equity and consumer protection. Key consumer concerns, including fair lending, and unfair, deceptive or abusive acts or practices, are the subject of heightened regulatory scrutiny in bank examination programs.

**French Language Requirements in Quebec** – On May 24, 2022, the Quebec government adopted Bill 96, which provides for material amendments to the Charter of the French Language and other legislation. Bill 96 received royal assent on June 1, 2022. Some changes were effective immediately, while others will be effective at a later date (three months, one year or three years). The purpose of Bill 96 is to affirm that the official language of Quebec is French. The Bill sets out new obligations intended to ensure that employees' right to carry on their activities in French is respected and that French is the language of business and service in Quebec. It also strengthens the forms of recourse available to employees and customers. The Office québécois de la langue française has enhanced enforcement powers and can impose stricter penalties. The main areas impacted by this legislation are labour and employment matters, the language of proceedings filed with the court, the registration of security interests and other related documents, the language of standard-form and consumer contracts, communications and contracts with the Quebec government and its agencies (subject to certain exceptions), trademarks, remedies and penalties. We are implementing the new requirements, in accordance with the required timelines.

**U.S. Regulatory Reform** – In 2022, leadership at the U.S. federal banking agencies continued to evolve, including key appointees who may initiate regulatory reforms, impact areas of supervisory focus or facilitate new rulemaking. It is expected that the agencies will issue new rules related to data collection for small business lending and reforms to the rules implementing the *Community Reinvestment Act*. In addition, agencies and U.S. lawmakers continue to focus on consumer protection, as well as potential reforms to bank merger standards. We continue to monitor the rulemaking activities at all relevant agencies.

**Other Regulatory Initiatives Impacting Financial Services in Canada** – The Department of Finance Canada has appointed an open banking lead to develop a Canadian open banking system, which would allow Canadian consumers and small businesses to direct federally regulated financial institutions to share their banking information through a secure mechanism with entities that meet information security and other requirements. Implementing regulations are required for other earlier amendments to the *Bank Act* that will allow banks to undertake broader financial technology activities. As part of the 2021 federal budget process, the Department of Finance Canada launched consultations regarding the reduction of interchange fees that would benefit small businesses. These consultations precede legislative modification to interchange fees, which had previously been lowered by legislation in 2018. At this time, we are not anticipating changes from the current voluntary commitment of the payment networks. In addition, the federal government has tabled Bill C-13, which is intended to promote substantive equality between the French and English languages in federally regulated businesses, including banks. The Bill is currently being considered by the Standing Committee on Official Languages.

**Climate Change and Environmental, Social and Governance Matters** – We continue to monitor the rulemaking activities of securities regulatory authorities, and we are participating in programs and consultations that focus on risk management and disclosures related to environmental, social and governance (ESG) matters, as well as trends in climate-related litigation. Globally, we are also tracking the emergence of formal supervisory regulatory frameworks governing climate change risk analysis and reporting, including in Canada, the United States, the United Kingdom and the European Union. In addition, emerging regulatory requirements in certain U.S. jurisdictions may prohibit or penalize financial institutions that engage in "boycotting" due to environmental concerns or require clients to meet environmental standards that exceed the legal or regulatory requirements in the jurisdictions in which they operate. ESG and climate-related litigation trends and regulatory investigations involving disclosure practices or financing activities, as well as allegations of "greenwashing", also continue to evolve. We are monitoring these trends and assessing their potential impact in the context of BMO's climate-related sustainable finance and responsible investment activities, environmental and social risk management, and ESG and climate-related disclosure practices. For further discussion, refer to the Environmental and Social Risk section.

**Privacy** – There is an increasing focus on privacy regulation related to the use and safeguarding of personal information, and we continue to advance our privacy program to comply with these evolving regulatory requirements. In Canada, significant reform to federal privacy laws is expected under Bill C-27, including new regulatory powers and penalties. In Quebec, Bill 64 has been adopted, which will modernize the province's private-sector privacy regime and give new powers to regulators to impose monetary administrative penalties. Ontario is also considering implementing private-sector privacy legislation. Outside of Canada, large fines and settlements have been imposed for breaches of privacy rights and failure to comply with regulatory privacy requirements, evidence of heightened regulatory vigilance and enforcement. The *California Consumer Privacy Act,* which is currently the most comprehensive privacy law at the state level in the United States, will be enhanced and amended in 2023 by the *California Privacy Rights Act*, which includes new and expanded privacy rights for California residents. Other states have introduced privacy legislation, and this is leading to a growing patchwork of privacy laws in the United States. In the European Union and the United Kingdom, new standard contractual clauses have been introduced to address concerns regarding the transfer of personal data to countries lacking adequate privacy protection. For additional discussion regarding privacy, refer to the Cyber and Cloud Security Risk section and the Operational Non-Financial Risk – Cyber and Cloud Security Risk section.

The General Counsel and the Chief Compliance Officer regularly report to the Audit and Conduct Review Committee (ACRC) of the Board of Directors and senior management on the effectiveness of our Enterprise Compliance Program. The program uses a risk-based approach to identify, assess and manage compliance with applicable laws and regulations, and directs operating groups and Corporate Services to maintain policies, procedures and controls that address these laws and regulations. Under the direction of the Chief Compliance Officer, we identify and report on gaps and deficiencies, and we track remedial action plans. The CAMLO also regularly reports to the ACRC.

All BMO employees must regularly complete legal and regulatory training on topics such as anti-corruption, anti-money laundering and privacy policies, standards and procedures. This is done in conjunction with our Code of Conduct training, which tests employees' knowledge and understanding of the behaviour required of employees of BMO.

**Caution**

This Legal and Regulatory Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

## Strategic Risk

**Strategic risk** arises from the possibility that BMO could experience financial loss or other types of harm due to changes in the external business environment and failure to respond effectively to these changes as a result of inaction, inappropriate strategies or poor implementation of strategies. Strategic risk also includes business risk, which arises from the specific business activities of the enterprise, and the effects these could have on its earnings.

Strategic risk arises from external risks inherent in the business environment within which BMO operates, as well as from the potential financial loss or other negative impact that BMO could experience if we are unable to address those external risks effectively. While external strategic risks – including economic, geopolitical, regulatory, technological, social and competitive risks – cannot be controlled, the likelihood and magnitude of their impact can be limited through an effective strategic risk management framework, and certain of these risks, including economic, geopolitical and regulatory risks, can be assessed through stress testing.

BMO's Corporate Strategy team oversees the strategic planning process and works with the lines of business, along with ERPM, Finance and Corporate Services, to identify, monitor and mitigate strategic risk across the enterprise. Our rigorous strategic risk management framework encourages a consistent approach to developing strategies, delivered through an integrated, multi-year strategic and financial planning process that directs funding to support specific strategic choices across each line of business.

The Corporate Strategy team works with the lines of business and key corporate stakeholders during the strategy development process to promote consistency and adherence to strategic management standards, including a consideration of the results of stress testing as an input into strategic decision-making. The potential impacts of changes in the business environment, including macroeconomic developments, broad industry trends, the actions of existing and new competitors and regulatory developments, are considered in this process and inform strategic decision-making within each line of business. Enterprise and group strategies are reviewed with the Executive Committee and the Board of Directors annually in interactive sessions that challenge assumptions and strategies in the context of both the current and potential future business environment. Where required, these strategies are revised to address new or unexpected developments, such as rising interest rates, inflation and changes to regulatory policy.

Business risk, as a component of strategic risk, encompasses the potential causes of earnings volatility that are distinct from credit, market or non-financial risk factors. BMO's profitability, and hence value, may be eroded by changes in the business environment or by failures of strategy or execution due to changing client expectations, the inability to correctly identify client expectations, or relatively ineffective strategic responses to industry changes. Within BMO, each operating group is responsible for controlling its respective business risk by assessing, managing and mitigating any risks arising from changes in its business volumes or cost structures, as well as actions that could be taken by competitors in future, among other factors. To manage the impacts of transverse business risks (i.e., those spanning multiple lines of business, such as climate change), the Corporate Strategy team works in tandem with the relevant lines of business to shape effective mitigation approaches.

The ability to implement the strategic plans developed by management influences our financial performance. Performance objectives established through the strategic planning process are monitored regularly and reported on quarterly, using both leading and lagging indicators of absolute and relative performance, so that strategies can be reviewed and adjusted where necessary. Regular strategic and financial updates are also reviewed closely in order to identify any significant emerging risk issues.

## Environmental and Social Risk

**Environmental and social risk** is the potential for loss or harm directly or indirectly resulting from environmental and social factors that impact BMO or its customers, and BMO's impact on the environment and society.

In recognition of its unique characteristics, Environmental and Social (E&S) risk is classified in BMO's Risk Taxonomy as a transverse risk that may arise over a range of time frames, from short-term to long-term. Factors that may give rise to E&S risk include, but are not limited to: climate change; pollution and waste; energy, water and other resource usage; biodiversity and land use; human rights; diversity, equity and inclusion; labour standards; community health, safety and security; land acquisition and involuntary resettlement; Indigenous peoples' rights; and cultural heritage.

We may be directly exposed to E&S risk associated with the ownership and operation of BMO's businesses, which involve the management and operation of real estate owned or leased by BMO. We may be indirectly exposed to the risk of financial loss or reputational harm if our customers, suppliers or clients are affected by E&S factors, such that they are unable to meet their financial or other obligations to us. E&S factors may also give rise to the risk of reputational harm, for instance if we are perceived to not respond effectively to those factors, or to cause, contribute or be linked to adverse impacts on the environment or society.

### Governance

The Board of Directors, through the Risk Review Committee (RRC), approves the Enterprise Risk Appetite Statement, including the E&S Risk Appetite Statement and the E&S Risk Corporate Policy. The Audit and Conduct Review Committee (ACRC) assesses the effectiveness of BMO's governance of sustainability matters and approves BMO's sustainability reporting and disclosures, including our Sustainability Report and Public Accountability Statement, and our Climate Report. The RRC assists the Board of Directors in executing its oversight responsibilities for the identification, assessment and management of our exposure to E&S risk, including risks arising from climate change, for overall adherence to risk management corporate policies, and for complying with risk-related regulatory requirements. The Human Resources Committee has responsibility for the alignment of executive compensation with performance, including performance in relation to BMO's environmental and social objectives. The Governance and Nominating Committee reviews the Board and committee charters regularly to assess coverage and the alignment of ESG-related oversight responsibilities to their respective mandates.

BMO's General Counsel is the bank's Executive Committee Sponsor for Sustainability and has accountability for areas such as legal and regulatory risk, reputation risk, business conduct, ethics and sustainability, including climate change. Our ESG Executive Committee comprises senior leaders from the lines of business and Corporate Services across the enterprise, and provides oversight and leadership for our sustainability strategy, including our Climate Ambition, as described in the Climate Change section. In addition to the ESG Executive Committee, the bank has a Sustainability Council, which is a leadership forum to advance sustainability initiatives. The Sustainability team is responsible for coordinating the development and maintenance of an enterprise-wide strategy that meets our overarching E&S responsibilities.

The Chief Risk Officer (CRO) provides independent review and oversight of enterprise-wide risks and leadership on risk issues, developing and maintaining a risk management framework and fostering a strong risk culture across the organization. Enterprise Risk and Portfolio Management (ERPM) provides risk management oversight, supporting a disciplined approach to risk-taking in independent transaction approval and portfolio management, policy formulation, risk reporting, climate scenario analysis, modelling and risk education. The CRO and the ERPM team periodically report to the RRC on E&S risk matters, including climate change.

As set out in our E&S Risk Corporate Policy, the Head of Risk Frameworks and Regulatory Capital Oversight leads the E&S team and is responsible for developing and overseeing the implementation of the E&S risk management framework, consistent with regulatory expectations and considering leading industry practices. These include: integrating the management of E&S risk across the ERMF; providing subject-matter expertise, input and approval, if needed, for data sources, advisors and other information necessary to support the identification, management, assessment, monitoring and reporting of E&S risk, developing the enterprise risk appetite statement for E&S risk with corresponding key risk metrics; reporting on E&S risk exposures to senior management, the Board of Directors and its committees, and our regulators; supporting the drafting of disclosures on E&S risk; supporting ERPM leadership in carrying out their accountabilities; and assessing new E&S risk exposures and recommending escalation to the CRO or General Counsel, and/or relevant management committees, if necessary.

The Chief Sustainability Officer works in partnership with ERPM and is responsible for providing strategic direction and advisory support on sustainability matters, including sustainability governance and E&S risk management, across BMO. These include: providing subject-matter expertise and input for the development of the E&S risk management framework outlined in the E&S Risk Corporate Policy, to drive alignment with regulatory expectations and considering leading industry practices; and providing guidance and subject-matter expertise to the operating groups and Corporate Services (including Finance, People & Culture, Strategy, Corporate Real Estate, and Procurement), Legal & Regulatory Compliance and ERPM regarding the identification, management, assessment, monitoring and reporting of E&S risk, in alignment with the Reputation Risk Management Framework set out in the Reputation Risk Corporate Standard. The Chief Sustainability Officer reports quarterly to the Sustainability Council and reports regularly to the ESG Executive Committee, as well as to other relevant Board and management committees, on key sustainability developments and climate change, and engages with external stakeholders to better understand the social consequences and environmental effects of our operations and financing decisions.

Senior management oversees E&S risk through management committees and forums that provide oversight and receive updates on sustainability matters and E&S risk. These include, but are not limited to: Sustainability Council, Disclosure Committee, Risk Management Committee (RMC), Reputation Risk Management Committee (RRMC), Enterprise Regulatory Developments Committee, Sustainable Finance Steering Committee, Impact Investment Fund Committee and BMO GAM Investment Committee. The ESG Executive Committee, chaired by BMO's General Counsel with representation from the Executive Committee, examines topics related to sustainability and E&S risk, including climate strategy. Additional committees, forums and working groups will be established as needed. In addition, the Board and management committees operating in other jurisdictions receive updates and oversee E&S risk for the relevant jurisdiction. They may also receive updates on sustainability matters and E&S risk across the enterprise.



## Environmental and Social Risk Management Approach

A successful future for BMO and our customers depends on the sustainability of the environment, communities and economies in which BMO and our customers operate. At BMO, we seek to understand the impact that environmental and social factors have on our business environment, clients, portfolios and operations. With this understanding, we are better positioned to make informed strategic decisions.

E&S risk is a transverse risk that impacts our other material risks: credit and counterparty risk, market risk, insurance risk, liquidity and funding risk, operational non-financial risk, legal and regulatory risk, strategic risk and reputation risk. We have developed a qualitative risk appetite statement on E&S risks, including risks related to climate change. In addition, we have established a key risk metric with risk tolerance thresholds, which measures our lending to carbon-related assets as a percentage of our total net loans and acceptances, net of the allowance for credit losses on impaired loans.

We have established an E&S Risk Corporate Policy that is part of our ERMF and applies to all employees of BMO and its subsidiaries. The policy outlines the expectation of our Board of Directors that BMO will integrate E&S risk considerations across the ERMF, and sets out a foundation for risk governance in all stages of the risk management life cycle (identification, assessment, management, monitoring and reporting). It is supported by BMO's three-lines-of-defence operating model, as underpinned by our risk culture. The approach to implementation involves building new capabilities while also leveraging our existing risk governance mechanisms and tools, to identify, assess, manage, monitor and report on potential impacts to clients, portfolios and operations. We recognize that E&S risk management is a new risk discipline and that, along with our peers, we are on a longer journey to fully understand and manage these risks. We will need to adapt and refine our approach, tools and methodologies in order to we address the changing expectations and requirements of our regulators, clients, communities and shareholders.

E&S risk is addressed in our Credit Risk Management Framework, including provisions for governance and accountabilities, enhanced due diligence and requirements for escalations or exceptions. We have sector-specific financing guidelines to help us identify and manage E&S risks in higher-risk sectors and to integrate a consideration of these risks into our decision-making, including topics such as climate change and Indigenous consultation. Social and environmental requirements in financing arrangements and transactions are monitored by the lines of business as part of our overall monitoring process. Updates to our policies are distributed to all affected employees, and we inform key decision-makers on a case-by-case or issue-by-issue basis, as necessary. Our internal audit function periodically conducts audits on all operating units, which include assessing compliance with applicable policies and procedures, including those related to E&S risk management. We evaluate the E&S risks associated with credit and counterparty transactions and exposures, and we apply enhanced due diligence processes to transactions with clients operating in certain higher-risk sectors and geographies. Transactions involving significant environmental or social concerns may be escalated to BMO's Reputation Risk Management Committee for consideration. We have restrictions in place for lending to companies involved in certain higher-risk activities, as described in the Environmental and Social Risk Management section of BMO's Sustainability Report.

Our Sustainability team partners with the Procurement and Corporate Real Estate groups on operational sustainability. Together, these groups are responsible for establishing and maintaining an operational environmental management approach, including the application of the framework set out in ISO 14001, and for setting objectives and targets that are intended to align our operations with our sustainability performance goals.

## Frameworks and Commitments

In order to better understand and address the issues that affect our business and our approach to E&S risk management, we are signatories to, and participate in, many market-leading initiatives, including the Equator Principles, the United Nations (UN) Principles for Responsible Banking (UNPRB) and the UN Principles for Responsible Investment (UNPRI), and we are a member of the Partnership for Carbon Accounting Financials (PCAF), the Net-Zero Banking Alliance (NZBA) and Net-Zero Asset Managers initiative (NZAM). These frameworks may include process and reporting requirements that are intended to be voluntary, or they may adopt a "comply-or-explain" approach. As signatories, we may be exposed to legal, regulatory or reputation risk in the event that we do not fully implement these frameworks, either as a result of our own actions or due to external factors.

- The Equator Principles serve as a common baseline and framework for financial institutions to identify, assess and manage E&S risks that may arise in project financing. We apply this credit risk management framework to identify, assess and manage any exposures to E&S risks in these transactions. As a signatory to the Equator Principles, we have implemented the EP4 framework, the most recent iteration of the Equator Principles, which includes requirements related to climate change and free, prior and informed consent of affected Indigenous peoples, for transactions within its scope.

- UNPRB provides a framework for a sustainable banking system and is the only sustainability framework for banks that is applicable across the enterprise, providing guidance at the strategic, portfolio and transaction levels across all lines of business. UNPRB enables any financial institution genuinely committed to sustainable and responsible banking to set targets that are within the scope of its capabilities and current financial and operational position.
- UNPRI is a framework that encourages sustainable investing through the integration of ESG considerations into investment decision-making and ownership practices.
- PCAF is a global partnership of financial institutions working together to develop and implement a harmonized approach to assessing and disclosing the greenhouse gas (GHG) emissions associated with loans and investments.
- NZBA and NZAM are industry-led, UN-convened organizations of banks and asset managers supporting the implementation of decarbonization strategies and the development of an internationally coherent framework and guidelines for banks and asset managers committed to aligning their lending and investment portfolios with net-zero emissions by 2050.

In order to be better informed about emerging environmental and social risks, we participate in global forums with our peers and maintain an open dialogue with our external stakeholders. BMO is a member of, and actively engaged in, sustainability-focused working groups of the United Nations Environment Programme – Finance Initiative (UNEP-FI). BMO is also a member of the U.S. Risk Management Association Climate Risk Consortium.

## Climate Change

BMO's Climate Ambition is to be our clients' lead partner in the transition to a net-zero world. We strive to achieve this ambition through a four-pillar climate strategy: Commitment; Capabilities; Client partnership and commercialization; and Convening for climate action. As a global bank, we aim to help drive the transformation to a net-zero carbon economy by partnering with our clients to accelerate the low-carbon transition. As part of the development of our climate-related capabilities, in March 2021, we announced the establishment of the BMO Climate Institute – a centre of excellence that bridges climate-related policy and science with business strategy and finance to unlock solutions for BMO and our clients.

In line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), we recognize that climate change involves exposure to physical risks and transition risks. Physical risks are risks associated with a changing climate, which can have both acute and chronic physical effects. These risks may include an increase in the frequency and intensity of weather-related events, such as storms, floods, wildfires and heatwaves, or longer-term changes, such as temperature changes, rising sea levels and changes in soil productivity. To date, key climate change indicators, weather-related events and associated scientific research indicate that global exposure to climate change risks may be accelerating. Transition risks are associated with the shift to a net-zero carbon economy. These risks may arise from climate-related policy changes, technological changes and behavioural changes involving carbon-pricing mechanisms or a shift in consumer preferences toward lower-carbon products and services. We continue to closely monitor these changes, some of which may unfold more rapidly than others as consumers, clients, investors, governments and communities act to enhance their resilience to climate-related risks.

We consider the physical and transaction risks arising from climate change to be transverse risks, as discussed in the Environmental and Social Risk Management Approach section. Our Environmental and Social Risk Financing Guideline includes direction on developing an understanding of specific climate change impacts on borrowers and their operations, including regulatory and/or legislative changes. To avoid over-exposure to any one sector or geographic region that might be exposed to climate-related risks, we maintain a diversified lending portfolio. We continue to conduct sector-specific reviews across our lending portfolio to assess exposure to climate-sensitive industries.

We are developing a climate scenario analysis program to explore climate-specific vulnerabilities in order to enhance our resilience to climate-related risks, in line with the TCFD recommendations. The climate scenario analysis program leverages existing risk capabilities in combination with climate-specific expertise. This program includes the evaluation of transition risks and/or physical risks, where relevant and potentially significant, across a selection of climate-sensitive portfolios, and we will continue expanding analyses across sectors and risk types in line with internal policies and any applicable regulatory requirements. Utilizing scenario analysis to gain a deeper understanding of climate-related risks is relatively new and evolving rapidly. As we enhance our knowledge of climate-related impacts and consider comprehensive climate-based scenarios, and as data modelling techniques and data availability improve, we expect our approach to analyzing these scenarios will evolve. These analyses will help identify potential exposures to material financial risks and may inform our business strategy in relation to climate change, going forward.

We continue to assess the credibility, reliability, comparability and decision-making usefulness of various measurement, assessment and reporting approaches, as well as how they could be incorporated into our climate risk management program and associated disclosures.

## Codes of Conduct and Statement on Human Rights

BMO's Board-approved Code of Conduct reflects our commitment to manage our business responsibly. Our Statement on Human Rights describes our approach to human rights in the context of the UN Guiding Principles on Business and Human Rights. We report publicly under the United Kingdom *Modern Slavery Act 2015* and the Australian *Modern Slavery Act 2018*, and we have in place a Supplier Code of Conduct, which outlines our standards for integrity, fair dealing and sustainability. We are also monitoring Bill S-211, *An Act to enact the Fighting Against Forced Labour and Child Labour in Supply Chains Act and to amend the Customs Tariff* (Bill S-211), and will develop a plan for alignment, if and when Bill S-211 is enacted. We expect our suppliers to be aware of, understand and comply with the principles of our Supplier Code of Conduct.

## Legal and Regulatory Developments

We continue to monitor the rulemaking activities of securities regulatory authorities and standard-setters. In October 2021, the Canadian Securities Administrators proposed National Instrument 51-107, *Disclosure of Climate-related Matters* (NI 51-107) and related policies. NI 51-107 would involve compliance by reporting issuers with disclosure requirements related to climate-related governance, strategy, risk management, metrics and targets, which would be finalized in 2023. In January 2022, Canadian securities regulators published guidance on ESG disclosure practices for investment funds. In March 2022, the International Sustainability Standards Board (ISSB) published two exposure drafts setting out proposed new IFRS general requirements, one involving disclosure of sustainability-related financial information and the other involving climate-related disclosures. The ISSB standards are expected to be released in 2023. We have established internal working groups to assess the impact of these new rules and standards on our disclosure practices, identify any potential gaps in our reporting and develop a plan to implement new disclosure practices, if and when such rules and standards are announced.

In May 2022, the Office of the Superintendent of Financial Institutions (OSFI) launched a public consultation process for its draft Guideline B-15, *Climate Risk Management* (Guideline B-15). Guideline B-15 consists of two chapters, the first outlining OSFI's expectations for governance and management of climate-related risks, and the second outlining OSFI's expectations for the disclosure of climate-related risks. The final Guideline B-15 is expected to be released in early fiscal 2023, with federally regulated financial institutions expected to report Guideline B-15 disclosures for fiscal years ending on or after October 1, 2023. We are currently developing programs through Enterprise-Wide Risk and Portfolio Management, including a climate scenario analysis program, that address these developments, and we plan to integrate these emerging expectations into our ERMF.

We are also monitoring trends in climate-related litigation, including cases involving allegations of "greenwashing", where claims of environmental and social benefits are made in relation to products or services or corporate performance that are not capable of substantiation, or which give a misleading impression. Prosecution of greenwashing claims has occurred in jurisdictions in Canada, the United States and Europe, and the Securities Exchange Commission (SEC) is seeking comment on two proposed rules expanding the regulation of ESG-related funds. We continue to evaluate our ESG-related disclosures for consistency and accuracy in relation to our practices and approach, and we are assessing our exposure to risks that may arise in relation to allegations of greenwashing.



## Reporting

We have supported the TCFD since 2018, and we have adopted the TCFD framework to guide climate-related financial disclosures, as set out in our Climate Report. Our Sustainability Report is prepared in accordance with the Global Reporting Initiative (GRI) Standards (core option) and the GRI Financial Services Sector Disclosure, and integrates the disclosure frameworks of the TCFD and the Sustainability Accounting Standards Board. This report includes the Public Accountability Statements for Bank of Montreal, Bank of Montreal Mortgage Corporation, BMO Life Assurance Company and BMO Life Insurance Company, outlining certain aspects of Bank of Montreal's contributions, and the contributions of its affiliates with operations in Canada, to the Canadian economy and society. These statements meet the requirements of the Canadian federal government's Public Accountability Statement regulations. The shareholders' auditors provide a limited assurance report on selected environmental and social indicators in the Sustainability Report and the Climate Report.

**Caution**

This Environmental and Social Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Reputation Risk

**Reputation risk** is the potential for loss or harm to the BMO brand. It can arise even if other risks are managed effectively.

Our reputation is built on our commitment to high standards of business conduct, and is one of our most valuable assets. By protecting and maintaining our reputation, we safeguard our brand, increase shareholder value, reduce our cost of capital, improve employee engagement, and preserve our customers' loyalty and trust.

We manage risks to our reputation by considering the potential reputational impact of all business activities, including strategy development and implementation, transactions and initiatives, product and service offerings, and events or incidents impacting BMO, as well as day-to-day decision-making and conduct. We consider our reputation in everything that we do.

BMO's Code of Conduct is the foundation of our ethical culture, and it provides employees with guidance on the behaviour that is expected of them, so that they can make the right choice in decisions that affect our customers and stakeholders. Ongoing reinforcement of the principles set out in the Code of Conduct minimizes risks to our reputation that may result from poor decisions or behaviour. Recognizing that non-financial risks can have a negative effect as significant as the effect of financial risks, we actively promote a culture which encourages employees to raise concerns and supports them in doing so, with zero tolerance for retaliation.

In our corporate governance practices and Enterprise-Wide Risk Management Framework, we have put in place specific controls to manage risks to our reputation. We seek to identify activities or events that could impact our reputation with customers, regulators or other stakeholders. Where we identify a potential risk to our reputation, we take steps to assess and manage that risk. Instances of significant or heightened exposure to reputation risk are escalated to BMO's Reputation Risk Management Committee for review. As misconduct can impact our reputation, the Chief Ethics Officer, who is responsible for enterprise-wide reporting on employee conduct, escalates instances of misconduct involving significant reputation risk to BMO's Reputation Risk Management Committee, as appropriate.

# Accounting Matters and Disclosure and Internal Control

## Critical Accounting Estimates and Judgments

The most significant assets and liabilities for which we must make estimates and judgments include: allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred tax assets; goodwill and intangible assets; insurance-related liabilities; provisions, including legal proceedings and restructuring charges; transfers of financial assets; and consolidation of structured entities. We make judgments in assessing the business model for financial assets, as well as whether substantially all risks and rewards have been transferred in respect of transfers of financial assets and whether we control structured entities (SEs). These judgments are discussed in Notes 6 and 7 of the financial statements. Note 17 of the consolidated financial statements provides further details on the estimates and judgments made in determining the fair value of financial instruments. If actual results were to differ from these estimates, the impact would be recorded in future periods.

By their very nature, the judgments and estimates that we make for the purposes of preparing financial statements relate to matters that are inherently uncertain. However, we have detailed policies and control procedures that are intended to ensure the judgments made in estimating these amounts are well controlled, independently reviewed and consistently applied from period to period. We believe that the estimates of the value of our assets and liabilities are appropriate.

For a more detailed discussion of the use of estimates, refer to Note 1 of the consolidated financial statements.

### Allowance for Credit Losses

The allowance for credit losses consists of allowances for estimated losses related to impaired loans in the portfolio provided for but not yet written off, and allowances for performing loans, which represent our best estimate of impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS 9 *Financial Instruments* and considering the guideline issued by the Office of the Superintendent of Financial Institutions (OSFI). Under the IFRS 9 expected credit loss (ECL) methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been actual impairment. ECL is calculated on a probability-weighted basis, based on three economic scenarios, and is calculated for each exposure in the portfolio as a function of the probability of default (PD), exposure at default (EAD) and loss given default (LGD), with the timing of the loss also considered. Where there has been a significant increase in credit risk, lifetime ECL is recorded; otherwise, 12 months of ECL is generally recorded. The determination of a significant increase in credit risk requires a consideration of many different factors that will vary by product and risk segment. The main factors considered in making this determination are the change in PD since origination and certain other criteria, such as 30-day past due and watchlist status. We may apply experienced credit judgment to reflect factors not captured in the results produced by the ECL models, as we deem necessary. We applied experienced credit judgment to reflect the impact of the uncertain environment on credit conditions and the economy. We have controls and processes in place to govern the ECL process, including judgments and assumptions used in determining the allowance on performing loans. These judgments and assumptions will change over time, and the impact of any such change will be recorded in future periods.

In establishing our allowance on performing loans, we attach probability weightings to three economic scenarios, which are representative of our view of economic and market conditions – a base scenario, which in our view represents the most probable outcome, as well as benign and adverse scenarios, all developed by our Economics group. The allowance on performing loans is sensitive to changes in economic forecasts and the probability weight assigned to each forecast scenario. When changes in economic performance in the forecasts are measured, we use real GDP as the basis, which acts as the key driver for movements in many of the other economic and market variables used, including the equity volatility index (VIX), corporate BBB credit spreads, unemployment rates, housing price indices and consumer credit. In addition, we also consider industry-specific variables, where applicable. Many of the variables have a high degree of interdependency, and as such, there is no single factor to which the allowances as a whole are sensitive. Holding all else equal, as economic variables worsen, the allowance on performing loans would increase and conversely, as they improve, the allowance would decrease. In addition, assuming all variables are held constant, an increase in loan balances or a deterioration in the credit quality of the loan portfolio would both drive an increase in the allowance on performing loans.

Information on the provision for credit losses for the years ended October 31, 2022 and 2021 can be found in the Total Provision for Credit Losses section. Additional information on the process and methodology for determining the allowance for credit losses can be found in the discussion of Credit and Counterparty Risk, as well as in Note 4 of the consolidated financial statements.

### Financial Instruments Measured at Fair Value

We record assets and liabilities classified as held for trading, assets and liabilities designated at fair value, derivatives, certain equity and debt securities and securities sold but not yet purchased at fair value. Fair value represents the amount that would be received on the sale of an asset or paid on the transfer of a liability in an orderly transaction between willing parties at the measurement date. We employ the fair value hierarchy based on inputs we use in valuation techniques to measure fair value of our financial instruments. The extent of our use of quoted market prices (Level 1), internal models with observable market information (Level 2) and internal models without observable market information (Level 3) in the valuation of loans, securities, derivatives, certain other assets, and liabilities recorded at fair value as at October 31, 2022 and October 31, 2021, as well as a sensitivity analysis of our Level 3 financial instruments, is disclosed in Note 17 of the consolidated financial statements. For instruments that are valued using models, we consider all reasonable available information and maximize the use of observable market data.

Valuation Product Control (VPC), a group independent of the trading lines of business, seeks to ensure that the recorded fair values of financial instruments are materially accurate by:

- Developing and maintaining valuation policies, procedures and methodologies in accordance with IFRS and regulatory requirements
- Establishing official rate sources for valuation data inputs, and
- Providing independent review of portfolios for which prices supplied by traders are used for valuation.

When VPC determines that adjustments to valuations are needed to better reflect fair value estimates based on data inputs from official rate sources, the adjustments are subject to review and approval by the Valuation Steering Committee (VSC).

The VSC is our senior management valuation committee. It meets at least monthly to address the more challenging valuation issues related to our portfolios, approves valuation methodology changes as needed to enhance the reliability of our fair value estimates, and acts as a key forum for the discussion of sources of valuation uncertainty and how these have been addressed by management.

As at October 31, 2022, total valuation adjustments were a net decrease in value of $197 million for financial instruments carried at fair value on the Consolidated Balance Sheet (a net decrease of $124 million as at October 31, 2021).

## Pension and Other Employee Future Benefits

Our pension and other employee future benefits expense is calculated by independent actuaries using assumptions determined by management. Differences between actual experience and the assumptions used are recognized in other comprehensive income.

Pension and other employee future benefits expense, plan assets and defined benefit obligations are sensitive to changes in discount rates. We determine discount rates at each year end for all plans, using high-quality corporate bonds with terms matching the plans' specific cash flows.

Additional information regarding accounting for pension and other employee future benefits, including a sensitivity analysis for key assumptions, is included in Note 21 of the consolidated financial statements.

## Impairment of Securities

We have investments in associates and joint ventures, which we review at each quarter-end reporting period to identify and evaluate those that show indications of possible impairment. For these investments, a significant or prolonged decline in the fair value of a security to an amount below its cost is objective evidence of impairment.

Debt securities measured at amortized cost or fair value through other comprehensive income (FVOCI) are assessed for impairment using the expected credit loss model. For securities determined to have low credit risk, the allowance for credit losses is measured at a 12-month expected credit loss.

Additional information regarding accounting for debt securities measured at amortized cost or FVOCI, other securities, the related allowance for credit losses and the determination of fair value is included in Notes 3 and 17 of the consolidated financial statements.

## Income Taxes and Deferred Tax Assets

Our approach to tax is guided by our Statement on Tax Principles, elements of which are described below, and governed by our tax risk management framework, which is implemented through internal controls and processes. We operate with due regard to risks, including tax and reputation risks. We actively seek to identify, assess, manage, monitor and report any tax risks that may arise in order to understand our financial exposure. Our intention is to comply fully with tax laws. We consider all applicable laws in connection with commercial activities, and where tax laws change in our business or for our customers, we adapt and make changes accordingly. We monitor applicable tax-related developments, including legislative proposals, case law and guidance from tax authorities. When an interpretation or application of tax laws is not clear, we take well-reasoned positions based on available case law and administrative positions of tax authorities, and we engage external advisors when necessary. We do not engage in tax planning that does not have commercial substance. We do not knowingly work with customers we believe use tax strategies to evade taxes. We are committed to maintaining productive relationships and cooperating with tax authorities on all tax matters. We seek to resolve disputes in a collaborative manner; however, when our interpretation of tax law differs from that of tax authorities, we are prepared to defend our position.

The provision for income taxes is calculated based on the expected tax treatment of transactions recorded in either the Consolidated Statement of Income or the Consolidated Statement of Changes in Equity. In determining the provision for income taxes, we interpret tax legislation, case law and administrative positions in numerous jurisdictions and, based on our judgment, we record the estimate of the amount required to settle tax obligations. We also make assumptions about the expected timing of the reversal of deferred tax assets and liabilities. If the interpretations and assumptions differ from those of tax authorities or if the timing of reversals is not as expected, the provision for income taxes could increase or decrease in future periods. The amount of any such increase or decrease cannot be reasonably estimated.

Deferred tax assets are recognized only when it is probable that sufficient taxable profit will be available in future periods against which deductible temporary differences or unused tax losses and tax credits may be utilized. We are required to assess whether it is probable that deferred income tax assets will be realized. Factors used to assess the probability of realization are past experience of income and capital gains, forecasts of future net income before taxes, and the remaining expiration period of tax loss carry forwards and tax credits. Changes in assessment of these factors could increase or decrease the provision for income taxes in future periods.

On November 4, 2022, the Canadian government introduced legislation related to certain tax measures that would be applicable to certain Canadian companies in a bank or life insurer group, including a one-time 15% tax (referred to as the Canada Recovery Dividend, or CRD), based on the average taxable income for fiscal 2020 and fiscal 2021, less a $1 billion exemption, payable in equal instalments over five years. Once the legislation is substantively enacted, which would occur after the third legislative reading, we expect to record a one-time tax expense relating to the CRD of approximately $325 million. The legislation also included a permanent 1.5% increase in the tax rate, based on taxable income above $100 million (effective for taxation years that end after April 7, 2022 and pro-rated for the first year). The permanent 1.5% increase in tax rate will also be reflected in higher deferred tax assets and liabilities. The fiscal 2022 impact of this increase is not expected to be material to the bank.

Canadian tax authorities have reassessed us for additional income tax and interest in an amount of approximately $1,425 million to date, in respect of certain 2011-2017 Canadian corporate dividends. Those reassessments denied certain dividend deductions on the basis that the dividends were received as part of a "dividend rental arrangement". In general, the tax rules raised by the Canadian tax authorities were prospectively addressed in the 2015 and 2018 Canadian Federal Budgets.

We filed Notices of Appeal with the Tax Court of Canada and the matter is in litigation. We expect to be reassessed for income tax in respect of similar activities undertaken in 2018. We remain of the view that our tax filing positions were appropriate and intend to challenge all reassessments. However, if such challenges are unsuccessful, the additional expense would negatively impact net income.

Additional information regarding accounting for income taxes is included in Note 22 of the consolidated financial statements.

## Goodwill and Intangible Assets

Goodwill is assessed for impairment at least annually. This assessment includes a comparison of the carrying value and the recoverable amount of each of our cash-generating units (CGUs) in order to verify that the recoverable amount of each CGU is greater than its carrying value. If the carrying value were to exceed the recoverable amount of the CGU, an impairment calculation would be performed. The recoverable amount of a CGU is the higher of its fair value less costs to sell and its value in use.

Fair value less costs to sell was used to perform the impairment test in all periods. In determining fair value less costs to sell, we employ the discounted cash flow model, consistent with that used when a business is acquired. This model is dependent on assumptions related to revenue growth, discount rates, synergies achieved on acquisition and the availability of comparable acquisition data. Changes in any of these assumptions would affect the determination of fair value for each of our CGUs in a different manner. Management must exercise judgment and make assumptions in determining fair value. Differences in judgments and assumptions could affect the determination of fair value and any resulting impairment write-down.

As at October 31, 2022, no goodwill impairment was recorded as the estimated fair value of the CGUs was greater than their carrying value. In 2021, we recorded a goodwill write-down of $779 million, due to the implied valuation from the definitive agreement to sell our EMEA Asset Management business (part of our Wealth Management CGU) to Ameriprise and our allocation of goodwill to the business being sold.

Intangible assets with definite lives are amortized to income on either a straight-line or an accelerated basis over a period not exceeding 15 years, depending on the nature of the asset. We test intangible assets with definite lives for impairment when circumstances indicate that the carrying value may not be recoverable.

Intangible assets with indefinite lives are tested annually for impairment. If an intangible asset is determined to be impaired, it will be written down to its recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

Additional information regarding the composition of goodwill and intangible assets is included in Note 11 of the consolidated financial statements.

## Insurance-Related Liabilities

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions. The most significant potential impact on the valuation of these liabilities would result from a change in the assumptions for interest rates and equity market values. If the assumed future interest rates were to increase by one percentage point, earnings before tax would increase by approximately $35 million. A reduction of one percentage point would lower earnings before tax by approximately $34 million. If the assumed equity market value increased by 10%, earnings before tax would increase by approximately $13 million. A reduction of 10% would lower earnings before tax by approximately $13 million.

Additional information on insurance-related liabilities is provided in Note 14 of the consolidated financial statements, and information on insurance risk is provided in the Insurance Risk section.

## Provisions

A provision is recognized if, as a result of a past event, we have a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are recorded at the best estimate of the amount required to settle any obligation as at the balance sheet date, considering the risks and uncertainties surrounding the obligation. For example, BMO and its subsidiaries are involved in various legal actions in the ordinary course of business. Factors considered in estimating any obligation related to these legal actions include a case-by-case assessment of specific facts and circumstances, past experience and the opinions of legal experts. Management and internal and external experts are involved in estimating any amounts that may be required. Certain provisions also relate to restructuring initiatives that we have undertaken. These provisions are recorded at management's best estimate of the amounts that will ultimately be paid out.

The actual costs of settling some obligations may be substantially higher or lower than the amount of the provisions.

Additional information regarding provisions is included in the Legal and Regulatory Risk section and in Note 24 of the consolidated financial statements.

## Transfer of Financial Assets

We sell Canadian residential mortgages to third-party Canadian securitization programs, including the Canada Mortgage Bond Program, directly to third-party investors under the National Housing Act Mortgage-Backed Securities program. In 2020, we participated in programs offered by the Canadian and U.S. governments in response to the COVID-19 pandemic to support businesses facing economic hardship, including the Canada Emergency Business Account (CEBA) program and the Business Development Bank of Canada (BDC) Co-Lending program.

We also purchase or originate certain commercial mortgage loans which are subsequently sold and derecognized, and we purchase U.S. government agency collateralized mortgage obligations (CMOs) issued by third-party sponsored vehicles, which we may further securitize by repackaging them into new CMOs prior to selling to third-party investors.

We assess whether substantially all of the risks and rewards of these financial instruments have been transferred in order to determine if they qualify for derecognition. Where we continue to be substantially exposed to prepayment, interest rate and/or credit risk of these financial instruments, they do not qualify for derecognition. We continue to recognize these financial instruments, and recognize the related cash proceeds as a secured financing on our Consolidated Balance Sheet.

## Consolidation of Structured Entities

In the normal course of business, we enter into arrangements with SEs, using them to secure customer transactions, to securitize financial assets to obtain liquidity, or to pass our credit risk exposure to holders of the vehicles' securities. For example, we enter into transactions with SEs where we transfer assets, including mortgage loans, mortgage-backed securities, credit card loans, real estate lines of credit, auto loans and equipment loans, in order to obtain alternate sources of funding, or as part of our trading activities. We are required to consolidate a SE if we control the SE. We control a SE when we have power over the SE, exposure or rights to variable returns as a result of our involvement, and the ability to exercise power to affect the amount of those returns.

Additional information concerning our interests in SEs is included in the Off-Balance Sheet Arrangements section, as well as in Note 7 of the consolidated financial statements.

**Caution**

This Critical Accounting Estimates and Judgments section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Changes in Accounting Policies in 2022

## IBOR Reform – Phase 2 amendments

Effective November 1, 2020, we early adopted Phase 2 amendments to IFRS 9, *Financial Instruments*, IAS 39, *Financial Instruments: Recognition and Measurement* (IAS 39), IFRS 7, *Financial Instruments: Disclosures*, and IFRS 4, *Insurance Contracts*, as well as IFRS 16, *Leases*. These amendments address issues that arise from the implementation of IBOR reform, where IBORs are replaced with alternative benchmark rates.

For financial instruments at amortized cost, the amendments introduce a practical expedient such that if a change in the contractual cash flows is as a result of IBOR reform and occurs on an economically equivalent basis, the change will be accounted for by updating the effective interest rate with no immediate gain or loss recognized. The amendments also provide additional temporary relief from the application of specific IAS 39 hedge accounting requirements to hedging relationships affected by IBOR reform. For example, there is an exception from the requirement to discontinue hedge accounting as a result of changes to hedge documentation required solely by IBOR reform. The amendments also require additional disclosure that allows users to understand the impact of IBOR reform on our financial instruments and risk management strategy.

Further details are provided in Note 1 of the consolidated financial statements.

## Conceptual Framework

Effective November 1, 2020, we adopted the revised Conceptual Framework (Framework), which sets out the fundamental concepts for financial reporting to drive consistency in standard-setting decisions and that similar transactions are treated in a similar way, so as to provide useful information to users of financial statements. The revised Framework had no impact on our accounting policies.

# Future Changes in Accounting Policies

## IFRS 17, *Insurance Contracts* (IFRS 17)

In May 2017, the IASB issued IFRS 17, *Insurance Contracts* (IFRS 17), which provides a comprehensive approach to accounting for all types of insurance contracts and will replace the existing IFRS 4, *Insurance Contracts* (IFRS 4). The standard was subsequently amended in June 2020, with additional narrow-scope amendments in December 2021. IFRS 17 will be effective for our fiscal year beginning November 1, 2023. We established an enterprise-wide project in order to meet the requirements of IFRS 17, and continue to evaluate the potential impacts of adoption, including available accounting policy and transition choices.

IFRS 17 will change the fundamental principles used to recognize and measure insurance contracts, including life insurance contracts reinsurance contracts and investment contracts with discretionary participation features. Key differences from IFRS 4 are as follows:

IFRS 17 requires us to measure groups of contracts based on our estimates of the present value of future cash flows that are expected to arise as we fulfil the contracts, an explicit risk adjustment for non-financial risk and a contractual service margin (CSM), which represents unearned profits. The CSM component of the insurance contract liability will be amortized into income as services/insurance coverage is provided, and groups of contracts that result in losses are recorded in income immediately. Under IFRS 4, there is no similar grouping requirement and gains/losses on new business are recognized in income immediately. When we adopt IFRS 17, we will establish the CSM for insurance contracts in effect, which will increase liabilities and decrease equity.

The discount rate we use under IFRS 4 is connected to the assets held to support insurance contract liabilities. Under IFRS 17, the discount rate will reflect the characteristics of insurance contract liabilities. We have an accounting policy choice under IFRS 17 to recognize changes in the discount rate on insurance contract liabilities, either through other comprehensive income or in our statement of income.

On transition, we will apply either a full retrospective approach, where we restate prior periods as if we had always applied IFRS 17, a modified retrospective approach where we apply specific modifications to the full retrospective application, or a full fair value method where we measure the contracts at fair value to determine a value for the CSM.

Further information on these amendments can be found in Note 1 of the consolidated financial statements.

**Caution**
This Future Changes in Accounting Policies section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Other Regulatory Developments

We continue to monitor and prepare for other regulatory developments, including those referenced elsewhere in this document.

For a comprehensive discussion of other regulatory developments, refer to the Enterprise-Wide Capital Management section, the Risks That May Affect Future Results section, the Liquidity and Funding Risk section, and the Legal and Regulatory Risk section.

## Treatment of Innovative Real Estate Secured Lending Products

On June 28, 2022, the Office of the Superintendent of Financial Institutions (OSFI) published an Advisory, Clarification on the Treatment of Innovative Real Estate Secured Lending Products, under Guideline B-20 (the Advisory), with clarifications on residential reverse mortgages, residential mortgages with shared equity features and combined loan plans (CLPs). For CLPs, the Advisory outlines OSFI's expectations on the re-advanceability feature above the 65% loan-to-value (LTV) limit.

BMO originates CLPs through its BMO Homeowner ReadiLine® product. The Advisory is not expected to impact the way CLPs are used by borrowers.

The Advisory will come into effect on October 31, 2023 in respect of CLPs originated, renewed or refinanced after this date.

**Caution**
This Other Regulatory Developments section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

# Transactions with Related Parties

In the ordinary course of business, we provide banking services to key management personnel on the same terms that we offer these services to preferred customers. Key management personnel are those persons having authority and responsibility for planning, directing and/or controlling the activities of an entity, being the directors and the most senior executives of the bank. Banking services are provided to joint ventures and equity-accounted investees on the same terms offered to customers for these services. We also offer employees a subsidy on annual credit card fees.

Details of our investments in joint ventures and associates and the compensation of key management personnel are disclosed in Note 27 of the consolidated financial statements.

# Shareholders' Auditors' Services and Fees

## Review of Shareholders' Auditors

The Audit and Conduct Review Committee (ACRC) is responsible for the appointment, compensation and oversight of the shareholders' auditors and conducts an annual assessment of the performance and effectiveness of the shareholders' auditors, considering factors such as: the quality of the services provided by the engagement team of the shareholders' auditors during the audit period; the qualifications, experience and geographical reach relevant to serving BMO Financial Group; the quality of communications received from the shareholders' auditors; and the independence, objectivity and professional skepticism of the shareholders' auditors.

The ACRC believes that it has a robust review process in place to monitor audit quality and oversee the work of the shareholders' auditors, including the lead audit partner, which includes:

- Annually reviewing the audit plan in two separate meetings, including a consideration of the impact of business risks on the audit plan and an assessment of the reasonableness of the audit fee
- Reviewing the qualifications of the senior engagement team members
- Monitoring the execution of the audit plan of the shareholders' auditors, with emphasis on the more complex and challenging areas of the audit
- Reviewing and evaluating the audit findings, including in camera sessions
- Evaluating audit quality and performance, including recent Canadian Public Accountability Board (CPAB) and Public Company Accounting Oversight Board (PCAOB) inspection reports on the shareholders' auditors and their peer firms
- At a minimum, holding quarterly meetings with the chair of the ACRC and the lead audit partner to discuss audit-related issues independently of management
- Performing a comprehensive review of the shareholders' auditors every five years, and performing an annual review between these comprehensive reviews, following the guidelines set out by the Chartered Professional Accountants of Canada (CPA Canada) and the CPAB.

In 2022, an annual review of the shareholders' auditors was completed. Input was sought from ACRC members and management on areas such as communication effectiveness, industry insights, audit performance, independence and professional skepticism. In addition, the most recent comprehensive review was completed in 2020, based on the latest recommendations of CPA Canada and CPAB. These reviews focused on: (i) the independence, objectivity and professional skepticism of the shareholders' auditors; (ii) the quality of the engagement team; and (iii) the quality of communications and interactions with the shareholders' auditors. As a result of the reviews, the ACRC was satisfied with the performance of the shareholders' auditors.

Independence of the shareholders' auditors is overseen by the ACRC in accordance with BMO's Auditor Independence Standard. The ACRC also confirms that the lead audit partner rotates out of that role after five consecutive years and does not return to that role for a further five years.

## Pre-Approval Policies and Procedures

As part of BMO Financial Group's corporate governance practices, the ACRC oversees the application of its policy limiting the services provided by the shareholders' auditors that are not related to their role as auditors. All services must comply with our Auditor Independence Standard, as well as professional standards and securities regulations governing auditor independence. The ACRC pre-approves the types of services (permitted services) that can be provided by the shareholders' auditors, as well as the annual audit plan, which includes fees for specific types of services. For permitted services that are not included in the pre-approved annual audit plan, approval to proceed with the engagement is provided in accordance with our Auditor Independence Standard.

## Shareholders' Auditors' Fees

| (Canadian $ in millions)<br>Fees (1) | **2022** | 2021 |
|---|---|---|
| Audit fees | **23.5** | 25.2 |
| Audit-related fees (2) | **4.8** | 3.4 |
| Tax services fees (3) | **0.3** | 0.1 |
| All other fees (4) | **0.7** | 1.3 |
| Total | **29.3** | 30.0 |

(1) The classification of fees is based on applicable Canadian securities laws and U.S. Securities and Exchange Commission definitions.

(2) Includes fees paid for specified procedures on BMO's Proxy Circular and other services, and French translation of financial statements, related continuous disclosures and other public documents containing financial information.

(3) Includes fees paid for tax compliance services provided to various BMO-managed investment company complexes.

(4) Includes other fees paid by BMO-managed investment company complexes.

# Management's Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting

## Disclosure Controls and Procedures

Disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management, including the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO), on a timely basis, so that appropriate decisions can be made regarding public disclosure.

As at October 31, 2022, under the supervision of the CEO and the CFO, BMO Financial Group's (BMO) management evaluated the effectiveness of the design and operation of its disclosure controls and procedures, as defined in Canada by National Instrument 52-109, *Certification of Disclosure in Issuers' Annual and Interim Filings*, and in the United States by Rule 13a-15(e) under the *Securities Exchange Act of 1934* (the Exchange Act). Based on this evaluation, the CEO and the CFO have concluded that BMO's disclosure controls and procedures were effective as at October 31, 2022.

## Internal Control over Financial Reporting

Internal control over financial reporting is a process designed under the supervision of the CEO and the CFO to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with IFRS and the requirements of the Securities and Exchange Commission (SEC) in the United States, as applicable. Management is responsible for establishing and maintaining adequate internal control over financial reporting for BMO.

Internal control over financial reporting at BMO includes policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of BMO
- Are designed to provide reasonable assurance that transactions are recorded as necessary to permit preparation of the consolidated financial statements in accordance with IFRS and the requirements of the SEC in the United States, as applicable, and that receipts and expenditures of BMO are being made only in accordance with authorizations by management and directors of BMO, and
- Are designed to provide reasonable assurance that any unauthorized acquisition, use or disposition of BMO's assets that could have a material effect on the consolidated financial statements is prevented or detected in a timely manner

Because of its inherent limitations, internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Furthermore, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the related policies and procedures may deteriorate.

BMO's management, under the supervision of the CEO and the CFO, has evaluated the effectiveness of internal control over financial reporting using the framework and criteria established in *Internal Control – Integrated Framework*, issued by the Committee of Sponsoring Organizations of the Treadway Commission in May 2013 (2013 COSO Framework). Based on this evaluation, management has concluded that internal control over financial reporting was effective as at October 31, 2022.

At the request of BMO's Audit and Conduct Review Committee, KPMG LLP (the shareholders' auditors), an independent registered public accounting firm, has conducted an audit of the effectiveness of our internal control over financial reporting. The audit report states in its conclusion that, in KPMG's opinion, BMO maintained, in all material respects, effective internal control over financial reporting as at October 31, 2022, in accordance with the criteria established in the 2013 COSO Framework.

## Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the year ended October 31, 2022 that have materially affected, or are reasonably likely to materially affect, the adequacy and effectiveness of our internal control over financial reporting.

# Supplemental Information

## Table 1: Ten-Year Statistical Review

| ($ millions)<br>As at or for the year ended October 31 | **2022** | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Condensed Consolidated Balance Sheet** | | | | | | | | | | |
| **Assets** | | | | | | | | | | |
| Cash and cash equivalents | **87,466** | 93,261 | 57,408 | 48,803 | 42,142 | 32,599 | 31,653 | 40,295 | 28,386 | 26,348 |
| Interest bearing deposits with banks | **5,734** | 8,303 | 9,035 | 7,987 | 8,305 | 6,490 | 4,449 | 7,382 | 6,110 | 6,259 |
| Securities | **273,262** | 232,849 | 234,260 | 189,438 | 180,935 | 163,198 | 149,985 | 130,918 | 143,319 | 135,800 |
| Securities borrowed or purchased under resale agreements | **113,194** | 107,382 | 111,878 | 104,004 | 85,051 | 75,047 | 66,646 | 68,066 | 53,555 | 39,799 |
| Loans, net of allowances | **551,339** | 458,262 | 447,420 | 426,984 | 384,172 | 358,507 | 357,518 | 321,531 | 291,400 | 269,059 |
| Other | **108,204** | 88,118 | 89,260 | 74,979 | 72,688 | 73,763 | 77,709 | 73,689 | 65,889 | 59,779 |
| Total assets | **1,139,199** | 988,175 | 949,261 | 852,195 | 773,293 | 709,604 | 687,960 | 641,881 | 588,659 | 537,044 |
| **Liabilities** | | | | | | | | | | |
| Deposits | **769,478** | 685,631 | 659,034 | 568,143 | 520,928 | 479,792 | 470,281 | 438,169 | 393,088 | 368,369 |
| Other | **290,533** | 238,128 | 225,218 | 225,981 | 199,862 | 180,438 | 170,910 | 159,383 | 155,254 | 133,500 |
| Subordinated debt | **8,150** | 6,893 | 8,416 | 6,995 | 6,782 | 5,029 | 4,439 | 4,416 | 4,913 | 3,996 |
| Total liabilities | **1,068,161** | 930,652 | 892,668 | 801,119 | 727,572 | 665,259 | 645,630 | 601,968 | 553,255 | 505,865 |
| Total equity | **71,038** | 57,523 | 56,593 | 51,076 | 45,721 | 44,345 | 42,306 | 39,422 | 34,313 | 30,107 |
| Total liabilities and equity | **1,139,199** | 988,175 | 949,261 | 852,195 | 773,293 | 709,604 | 687,960 | 641,881 | 588,659 | 537,044 |
| **Condensed Consolidated Statement of Income** | | | | | | | | | | |
| Net interest income | **15,885** | 14,310 | 13,971 | 12,888 | 11,438 | 11,275 | 10,945 | 9,796 | 8,292 | 8,487 |
| Non-interest revenue | **17,825** | 12,876 | 11,215 | 12,595 | 11,467 | 10,832 | 10,015 | 9,593 | 9,931 | 8,343 |
| Total revenue | **33,710** | 27,186 | 25,186 | 25,483 | 22,905 | 22,107 | 20,960 | 19,389 | 18,223 | 16,830 |
| Insurance claims, commissions and changes in policy benefit liabilities (CCPB) | **683** | (1,399) | (1,708) | (2,709) | (1,352) | (1,538) | (1,543) | (1,254) | (1,505) | (767) |
| Provision for credit losses (PCL) | **(313)** | (20) | (2,953) | (872) | (662) | (746) | (771) | (544) | (527) | (553) |
| Non-interest expense | **(16,194)** | (15,509) | (14,177) | (14,630) | (13,477) | (13,192) | (12,916) | (12,250) | (10,955) | (10,260) |
| Income before income taxes | **17,886** | 10,258 | 6,348 | 7,272 | 7,414 | 6,631 | 5,730 | 5,341 | 5,236 | 5,250 |
| Provision for income taxes | **(4,349)** | (2,504) | (1,251) | (1,514) | (1,961) | (1,292) | (1,100) | (936) | (903) | (1,055) |
| Net income | **13,537** | 7,754 | 5,097 | 5,758 | 5,453 | 5,339 | 4,630 | 4,405 | 4,333 | 4,195 |
| Attributable to equity holders of the bank | **13,537** | 7,754 | 5,097 | 5,758 | 5,453 | 5,337 | 4,621 | 4,370 | 4,277 | 4,130 |
| Attributable to non-controlling interest in subsidiaries | **–** | – | – | – | – | 2 | 9 | 35 | 56 | 65 |
| Net income | **13,537** | 7,754 | 5,097 | 5,758 | 5,453 | 5,339 | 4,630 | 4,405 | 4,333 | 4,195 |
| **Condensed Consolidated Statement of Changes in Equity** | | | | | | | | | | |
| Preferred shares and other equity instruments | **6,308** | 5,558 | 6,598 | 5,348 | 4,340 | 4,240 | 3,840 | 3,240 | 3,040 | 2,265 |
| Common shares | **17,744** | 13,599 | 13,430 | 12,971 | 12,929 | 13,032 | 12,539 | 12,313 | 12,357 | 12,003 |
| Contributed surplus | **317** | 313 | 302 | 303 | 300 | 307 | 294 | 299 | 304 | 315 |
| Retained earnings | **45,117** | 35,497 | 30,745 | 28,725 | 25,850 | 23,700 | 21,207 | 18,930 | 17,237 | 15,087 |
| Accumulated other comprehensive income | **1,552** | 2,556 | 5,518 | 3,729 | 2,302 | 3,066 | 4,426 | 4,640 | 1,375 | 437 |
| Total equity | **71,038** | 57,523 | 56,593 | 51,076 | 45,721 | 44,345 | 42,306 | 39,422 | 34,313 | 30,107 |

Certain comparative figures have been reclassified to conform with the current year's presentation to reflect changes in accounting policies. Refer to Note 1 of the consolidated financial statements.

BMO adopted various new and amended IFRS standards in 2015, IFRS 9 *Financial Instruments* in 2018 and IFRS 16 *Leases* in 2020 prospectively, with no changes to prior periods. In 2014, BMO adopted several new and amended accounting pronouncements issued by the International Accounting Standards Board and elected to reclassify 2012 and 2013 amounts. In 2019, BMO adopted IFRS 15 *Revenue from Contract with Customers* and elected to reclassify 2017 and 2018 amounts.

| ($ millions, except as noted)<br>As at or for the year ended October 31 | **2022** | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Other Financial Measures** | | | | | | | | | | |
| **Common Share Data** ($) | | | | | | | | | | |
| Basic earnings per share | **20.04** | 11.60 | 7.56 | 8.68 | 8.19 | 7.93 | 6.94 | 6.59 | 6.44 | 6.19 |
| Diluted earnings per share | **19.99** | 11.58 | 7.55 | 8.66 | 8.17 | 7.90 | 6.92 | 6.57 | 6.41 | 6.17 |
| Dividends declared per share | **5.44** | 4.24 | 4.24 | 4.06 | 3.78 | 3.56 | 3.40 | 3.24 | 3.08 | 2.94 |
| Book value per share | **95.60** | 80.18 | 77.40 | 71.54 | 64.73 | 61.91 | 59.57 | 56.31 | 48.18 | 43.22 |
| Closing share price | **125.49** | 134.37 | 79.33 | 97.50 | 98.43 | 98.83 | 85.36 | 76.04 | 81.73 | 72.62 |
| One-year return (%) | **(3.1)** | 75.9 | (14.6) | 3.2 | 3.3 | 20.2 | 17.0 | (3.0) | 17.1 | 28.8 |
| Number outstanding (in thousands) | | | | | | | | | | |
| End of year | **677,107** | 648,136 | 645,889 | 639,232 | 639,330 | 647,816 | 645,761 | 642,583 | 649,050 | 644,130 |
| Average basic | **663,990** | 647,163 | 641,424 | 638,881 | 642,930 | 649,650 | 644,049 | 644,916 | 645,860 | 648,476 |
| Average diluted | **665,707** | 648,676 | 642,128 | 640,360 | 644,913 | 651,961 | 646,126 | 647,141 | 648,475 | 649,806 |
| Market capitalization ($ billions) | **85.0** | 87.1 | 51.2 | 62.3 | 62.9 | 64.0 | 55.1 | 48.9 | 53.0 | 46.8 |
| Price-to-earnings multiple | **6.3** | 11.6 | 10.5 | 11.3 | 12.0 | 12.5 | 12.3 | 11.6 | 12.8 | 11.8 |
| Market-to-book value multiple | **1.31** | 1.68 | 1.02 | 1.36 | 1.52 | 1.60 | 1.43 | 1.35 | 1.70 | 1.66 |
| Dividend yield (%) | **4.3** | 3.2 | 5.3 | 4.2 | 3.8 | 3.6 | 4.0 | 4.3 | 3.8 | 4.0 |
| Dividend payout ratio (%) | **27.1** | 36.5 | 56.1 | 46.8 | 46.1 | 44.9 | 49.0 | 49.2 | 47.8 | 47.5 |
| **Financial Measures and Ratios** (%) | | | | | | | | | | |
| Return on equity | **22.9** | 14.9 | 10.1 | 12.6 | 13.3 | 13.2 | 12.1 | 12.5 | 14.0 | 14.9 |
| Efficiency ratio | **48.0** | 57.0 | 56.3 | 57.4 | 58.8 | 59.7 | 61.6 | 63.2 | 60.1 | 61.0 |
| Net interest margin on average earning assets | **1.62** | 1.59 | 1.64 | 1.70 | 1.67 | 1.74 | 1.76 | 1.69 | 1.57 | 1.75 |
| Total PCL-to-average net loans and acceptances | **0.06** | – | 0.63 | 0.20 | 0.17 | 0.20 | 0.22 | 0.17 | 0.18 | 0.21 |
| PCL on impaired loans-to-average net loans and acceptances | **0.10** | 0.11 | 0.33 | 0.17 | 0.18 | 0.22 | 0.22 | – | – | – |
| Return on average assets (%) | **1.26** | 0.79 | 0.54 | 0.69 | 0.72 | 0.74 | 0.65 | 0.66 | 0.72 | 0.74 |
| Return on average risk-weighted assets (%) (1) | **3.89** | 2.38 | 1.51 | 1.86 | 1.97 | 1.98 | 1.71 | 1.84 | 1.85 | 1.93 |
| Average assets ($ millions) | **1,072,497** | 981,140 | 942,450 | 833,252 | 754,295 | 722,626 | 707,122 | 664,391 | 593,928 | 555,431 |
| Net income growth | **74.6** | 52.1 | (11.5) | 5.6 | 2.1 | 15.3 | 5.1 | 1.7 | 3.3 | 0.9 |
| Diluted EPS growth | **72.7** | 53.3 | (12.8) | 6.0 | 3.3 | 14.3 | 5.3 | 2.5 | 3.9 | 1.1 |
| **Capital Measures** (%) (1) | | | | | | | | | | |
| Common Equity Tier 1 Ratio | **16.7** | 13.7 | 11.9 | 11.4 | 11.3 | 11.4 | 10.1 | 10.7 | 10.1 | 9.9 |
| Tier 1 Capital Ratio | **18.4** | 15.4 | 13.6 | 13.0 | 12.9 | 13.0 | 11.6 | 12.3 | 12.0 | 11.4 |
| Total Capital Ratio | **20.7** | 17.6 | 16.2 | 15.2 | 15.2 | 15.1 | 13.6 | 14.4 | 14.3 | 13.7 |
| Leverage Ratio | **5.6** | 5.1 | 4.8 | 4.3 | 4.2 | 4.4 | 4.2 | 4.2 | na | na |
| **Other Statistical Information** | | | | | | | | | | |
| Number of employees | **46,722** | 43,863 | 43,360 | 45,513 | 45,454 | 45,200 | 45,234 | 46,353 | 46,778 | 45,631 |
| Number of bank branches | **1,383** | 1,405 | 1,409 | 1,456 | 1,483 | 1,503 | 1,522 | 1,535 | 1,553 | 1,563 |
| Number of automated teller machines | **4,717** | 4,851 | 4,820 | 4,967 | 4,828 | 4,731 | 4,599 | 4,761 | 4,338 | 4,225 |

BMO adopted various new and amended IFRS standards in 2015, IFRS 9 *Financial Instruments* in 2018 and IFRS 16 *Leases* in 2020 prospectively, with no changes to prior periods. In 2014, BMO adopted several new and amended accounting pronouncements issued by the International Accounting Standards Board and elected to reclassify 2012 and 2013 amounts. In 2019, BMO adopted IFRS 15 *Revenue from Contract with Customers* and elected to reclassify 2017 and 2018 amounts.

(1) Capital ratios and risk-weighted assets are disclosed in accordance with the Capital Adequacy Requirements (CAR) Guideline, as set out by OSFI, as applicable.

na – not applicable

# Table 2: Average Assets, Liabilities and Interest Rates

| ($ millions, except as noted)<br>For the year ended October 31 | **2022**<br>**Average balances** | **Average interest rate (%)** | **Interest income/ expense** | 2021<br>Average balances | Average interest rate (%) | Interest income/ expense |
|---|---|---|---|---|---|---|
| **Assets** | | | | | | |
| **Canadian Dollar** | | | | | | |
| Deposits with other banks and other interest bearing assets | **33,950** | **1.23** | **416** | 34,255 | 0.23 | 79 |
| Securities | **80,971** | **2.52** | **2,043** | 90,140 | 1.79 | 1,618 |
| Securities borrowed or purchased under resale agreements | **50,090** | **1.39** | **695** | 43,375 | 0.44 | 190 |
| Loans | | | | | | |
| Residential mortgages | **132,118** | **2.63** | **3,476** | 122,661 | 2.58 | 3,168 |
| Non-residential mortgages | **4,954** | **3.09** | **153** | 5,368 | 3.19 | 171 |
| Personal and credit cards | **74,832** | **4.68** | **3,503** | 66,247 | 4.26 | 2,823 |
| Business and government | **96,057** | **3.81** | **3,656** | 82,858 | 3.37 | 2,796 |
| Total loans | **307,961** | **3.50** | **10,788** | 277,134 | 3.23 | 8,958 |
| Total Canadian dollar | **472,972** | **2.95** | **13,942** | 444,904 | 2.44 | 10,845 |
| **U.S. Dollar and Other Currencies** | | | | | | |
| Deposits with other banks and other interest bearing assets | **60,463** | **0.83** | **504** | 68,612 | 0.18 | 124 |
| Securities | **185,099** | **1.92** | **3,548** | 145,504 | 1.61 | 2,345 |
| Securities borrowed or purchased under resale agreements | **62,416** | **1.02** | **640** | 62,250 | 0.39 | 245 |
| Loans | | | | | | |
| Residential mortgages | **8,312** | **2.97** | **247** | 8,055 | 3.02 | 243 |
| Non-residential mortgages | **12,426** | **3.86** | **479** | 10,684 | 3.18 | 339 |
| Personal and credit cards | **15,060** | **3.89** | **586** | 13,344 | 3.86 | 516 |
| Business and government | **160,157** | **4.34** | **6,951** | 141,003 | 3.71 | 5,230 |
| Total loans | **195,955** | **4.22** | **8,263** | 173,086 | 3.66 | 6,328 |
| Total U.S. dollar and other currencies | **503,933** | **2.57** | **12,955** | 449,452 | 2.01 | 9,042 |
| Other non-interest bearing assets | **95,592** | | | 86,784 | | |
| **Total All Currencies** | | | | | | |
| Total assets and interest income | **1,072,497** | **2.51** | **26,897** | 981,140 | 2.03 | 19,887 |
| **Liabilities** | | | | | | |
| **Canadian Dollar** | | | | | | |
| Deposits | | | | | | |
| Banks | **4,983** | **0.37** | **19** | 9,616 | 0.35 | 33 |
| Business and government | **169,063** | **1.31** | **2,221** | 157,226 | 0.69 | 1,091 |
| Individuals | **149,329** | **0.58** | **866** | 142,833 | 0.44 | 622 |
| Total deposits | **323,375** | **0.96** | **3,106** | 309,675 | 0.56 | 1,746 |
| Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1) | **60,163** | **1.62** | **974** | 55,415 | 0.91 | 506 |
| Subordinated debt and other interest bearing liabilities | **25,788** | **2.39** | **616** | 28,416 | 2.10 | 597 |
| Total Canadian dollar | **409,326** | **1.15** | **4,696** | 393,506 | 0.72 | 2,849 |
| **U.S. Dollar and Other Currencies** | | | | | | |
| Deposits | | | | | | |
| Banks | **23,583** | **1.21** | **285** | 24,200 | 0.33 | 80 |
| Business and government | **305,576** | **1.02** | **3,104** | 272,380 | 0.45 | 1,234 |
| Individuals | **75,160** | **0.29** | **216** | 71,795 | 0.22 | 160 |
| Total deposits | **404,319** | **0.89** | **3,605** | 368,375 | 0.40 | 1,474 |
| Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1) | **90,324** | **1.85** | **1,671** | 74,376 | 1.35 | 1,005 |
| Subordinated debt and other interest bearing liabilities | **20,600** | **5.05** | **1,040** | 14,118 | 1.76 | 249 |
| Total U.S. dollar and other currencies | **515,243** | **1.23** | **6,316** | 456,869 | 0.60 | 2,728 |
| Other non-interest bearing liabilities | **84,253** | | | 74,471 | | |
| **Total All Currencies** | | | | | | |
| Total liabilities and interest expense | **1,008,822** | **1.09** | **11,012** | 924,846 | 0.60 | 5,577 |
| Shareholders' equity | **63,675** | | | 56,294 | | |
| **Total Liabilities, Interest Expense and Shareholders' Equity** | **1,072,497** | **1.03** | **11,012** | 981,140 | 0.57 | 5,577 |
| **Net interest margin** | | | | | | |
| – based on earning assets | | **1.62** | | | 1.59 | |
| – based on total assets | | **1.48** | | | 1.46 | |
| **Net interest income** | | | **15,885** | | | 14,310 |

(1) For the years ended October 31, 2022 and 2021, the maximum amount of securities lent or sold under repurchase agreements at any month end was $129,549 million and $102,567 million, respectively.

Supplemental Information

# Table 3: Volume/Rate Analysis of Changes in Net Interest Income

| ($ millions) For the year ended October 31 | 2022/2021 Increase (decrease) due to change in Average balance | Average rate | Total |
|---|---|---|---|
| **Assets** | | | |
| **Canadian Dollar** | | | |
| Deposits with other banks and other interest bearing assets | (1) | 338 | 337 |
| Securities | (165) | 590 | 425 |
| Securities borrowed or purchased under resale agreements | 30 | 475 | 505 |
| Loans | | | |
| Residential mortgages | 243 | 65 | 308 |
| Non-residential mortgages | (13) | (5) | (18) |
| Personal and credit cards | 366 | 314 | 680 |
| Business and government | 446 | 414 | 860 |
| Total loans | 1,042 | 788 | 1,830 |
| Change in Canadian dollar interest income | 906 | 2,191 | 3,097 |
| **U.S. Dollar and Other Currencies** | | | |
| Deposits with other banks and other interest bearing assets | (15) | 395 | 380 |
| Securities | 639 | 564 | 1,203 |
| Securities borrowed or purchased under resale agreements | 1 | 394 | 395 |
| Loans | | | |
| Residential mortgages | 8 | (4) | 4 |
| Non-residential mortgages | 55 | 85 | 140 |
| Personal and credit cards | 65 | 5 | 70 |
| Business and government | 711 | 1,010 | 1,721 |
| Total loans | 839 | 1,096 | 1,935 |
| Change in U.S. dollar and other currencies interest income | 1,464 | 2,449 | 3,913 |
| **Total All Currencies** | | | |
| Change in total interest income (a) | 2,370 | 4,640 | 7,010 |
| **Liabilities** | | | |
| **Canadian Dollar** | | | |
| Deposits | | | |
| Banks | (16) | 2 | (14) |
| Business and government | 83 | 1,047 | 1,130 |
| Individuals | 28 | 216 | 244 |
| Total deposits | 95 | 1,265 | 1,360 |
| Securities sold but not yet purchased and securities lent or sold under repurchase agreements | 43 | 425 | 468 |
| Subordinated debt and other interest bearing liabilities | (55) | 74 | 19 |
| Change in Canadian dollar interest expense | 83 | 1,764 | 1,847 |
| **U.S. Dollar and Other Currencies** | | | |
| Deposits | | | |
| Banks | (2) | 207 | 205 |
| Business and government | 150 | 1,720 | 1,870 |
| Individuals | 7 | 49 | 56 |
| Total deposits | 155 | 1,976 | 2,131 |
| Securities sold but not yet purchased and securities lent or sold under repurchase agreements | 216 | 450 | 666 |
| Subordinated debt and other interest bearing liabilities | 114 | 677 | 791 |
| Change in U.S. dollar and other currencies interest expense | 485 | 3,103 | 3,588 |
| **Total All Currencies** | | | |
| Change in total interest expense (b) | 568 | 4,867 | 5,435 |
| Change in total net interest income (a – b) | 1,802 | (227) | 1,575 |

## Table 4: Net Loans and Acceptances – Segmented Information (1) (2)

| ($ millions) | Canada | | United States | | Other countries | | Total | |
|---|---|---|---|---|---|---|---|---|
| As at October 31 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| Consumer | | | | | | | | |
| Residential mortgages | **139,387** | 128,020 | **9,483** | 7,718 | **–** | – | **148,870** | 135,738 |
| Credit cards | **9,069** | 7,642 | **594** | 461 | **–** | – | **9,663** | 8,103 |
| Consumer instalment and other personal loans | **71,070** | 63,841 | **14,931** | 13,232 | **–** | – | **86,001** | 77,073 |
| Total consumer | **219,526** | 199,503 | **25,008** | 21,411 | **–** | – | **244,534** | 220,914 |
| Total business and government | **135,317** | 113,895 | **175,571** | 132,087 | **11,225** | 7,453 | **322,113** | 253,435 |
| Total loans and acceptances, net of allowance for credit losses on impaired loans | **354,843** | 313,398 | **200,579** | 153,498 | **11,225** | 7,453 | **566,647** | 474,349 |
| Allowance for credit losses on performing loans | **(1,102)** | (1,143) | **(959)** | (910) | **(12)** | (13) | **(2,073)** | (2,066) |
| Total net loans and acceptances | **353,741** | 312,255 | **199,620** | 152,588 | **11,213** | 7,440 | **564,574** | 472,283 |

## Table 5: Net Impaired Loans and Acceptances (NIL) – Segmented Information (2) (3) (4)

| ($ millions, except as noted) | Canada | | United States | | Other countries | | Total | |
|---|---|---|---|---|---|---|---|---|
| As at October 31 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| Consumer | | | | | | | | |
| Residential mortgages | **187** | 216 | **98** | 123 | **–** | – | **285** | 339 |
| Consumer instalment and other personal loans | **109** | 83 | **101** | 113 | **–** | – | **210** | 196 |
| Total consumer | **296** | 299 | **199** | 236 | **–** | – | **495** | 535 |
| Business and government | **499** | 551 | **445** | 585 | **8** | – | **952** | 1,136 |
| Total impaired loans and acceptances, net of allowance for credit losses on impaired loans | **795** | 850 | **644** | 821 | **8** | – | **1,447** | 1,671 |
| **Condition Ratios** (1) | | | | | | | | |
| NIL as a % of net loans and acceptances | **0.22** | 0.27 | **0.32** | 0.54 | **0.07** | – | **0.26** | 0.35 |
| NIL as a % of net loans and acceptances | | | | | | | | |
| Consumer | **0.13** | 0.15 | **0.80** | 1.10 | **–** | – | **0.20** | 0.24 |
| Business and government | **0.37** | 0.48 | **0.25** | 0.44 | **0.07** | – | **0.30** | 0.45 |

(1) Aggregate Net Loans and Acceptances balances are net of allowance for credit losses on performing loans and impaired loans. The Consumer and Business and government Net Loans and Acceptances balances are net of allowance for credit losses on impaired loans only.
(2) Segmented credit information by geographic area is based upon the country of ultimate risk.
(3) Net Impaired Loans and Acceptances balances are net of allowance for credit losses on impaired loans.
(4) Net Impaired Loans exclude purchased credit impaired loans.

Supplemental Information

# Table 6: Net Loans and Acceptances – Segmented Information (1) (2)

| ($ millions) As at October 31 | 2022 | 2021 |
|---|---|---|
| **Net Loans and Acceptances by Province** | | |
| Atlantic provinces | **17,617** | 15,996 |
| Quebec | **53,975** | 48,090 |
| Ontario | **159,862** | 136,638 |
| Prairie provinces | **54,607** | 51,460 |
| British Columbia and territories | **67,680** | 60,071 |
| Total net loans and acceptances in Canada | **353,741** | 312,255 |
| **Net Business and Government Loans by Industry** | | |
| Commercial real estate | **54,478** | 43,259 |
| Construction (non-real estate) | **5,761** | 4,367 |
| Retail trade | **23,716** | 16,924 |
| Wholesale trade | **20,693** | 14,727 |
| Agriculture | **14,181** | 13,739 |
| Communications | **876** | 787 |
| Financing products | **1,588** | 1,084 |
| Manufacturing | **36,607** | 28,034 |
| Mining | **3,503** | 1,832 |
| Oil and gas | **3,780** | 5,905 |
| Transportation | **14,691** | 12,952 |
| Utilities | **9,754** | 7,263 |
| Forest products | **1,113** | 780 |
| Service industries | **55,658** | 45,019 |
| Financial | **70,438** | 52,531 |
| Government | **1,859** | 1,720 |
| Other | **3,417** | 2,512 |
| Total business and government | **322,113** | 253,435 |

# Table 7: Net Impaired Loans and Acceptances – Segmented Information (3)

| ($ millions) As at October 31 | 2022 | 2021 |
|---|---|---|
| **Net Impaired Business and Government Loans** | | |
| Commercial real estate | **61** | 56 |
| Construction (non-real estate) | **34** | 58 |
| Retail trade | **92** | 143 |
| Wholesale trade | **47** | 38 |
| Agriculture | **189** | 190 |
| Communications | **1** | 1 |
| Financing products | **–** | – |
| Manufacturing | **143** | 130 |
| Mining | **14** | 2 |
| Oil and gas | **–** | 63 |
| Transportation | **63** | 73 |
| Utilities | **3** | 2 |
| Forest products | **2** | 2 |
| Service industries | **266** | 344 |
| Financial | **25** | 12 |
| Government | **3** | 2 |
| Other | **9** | 20 |
| Total business and government | **952** | 1,136 |

(1) Aggregate Net Loans and Acceptances balances are net of allowance for credit losses on performing loans and impaired loans. The net Business and government loans by industry balances are net of allowance for credit losses on impaired loans only.
(2) Segmented credit information by geographic area is based upon the country of ultimate risk.
(3) Balances are presented net of allowances on impaired loans.

# Table 8: Changes in Gross Impaired Loans – Segmented Information (1) (2)

| ($ millions, except as noted) | Canada | | United States | | Other countries | | Total | |
|---|---|---|---|---|---|---|---|---|
| As at October 31 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| Gross impaired loans and acceptances (GIL), beginning of year | | | | | | | | |
| Consumer | **382** | 414 | **256** | 335 | **–** | – | **638** | 749 |
| Business and government | **813** | 929 | **718** | 1,876 | **–** | 84 | **1,531** | 2,889 |
| Total GIL, beginning of year | **1,195** | 1,343 | **974** | 2,211 | **–** | 84 | **2,169** | 3,638 |
| Additions to impaired loans and acceptances | | | | | | | | |
| Consumer | **630** | 712 | **77** | 134 | **–** | – | **707** | 846 |
| Business and government | **538** | 616 | **377** | 313 | **13** | – | **928** | 929 |
| Total additions | **1,168** | 1,328 | **454** | 447 | **13** | – | **1,635** | 1,775 |
| Reductions to impaired loans and acceptances (3) | | | | | | | | |
| Consumer | **(462)** | (547) | **(66)** | (162) | **–** | – | **(528)** | (709) |
| Business and government | **(533)** | (636) | **(389)** | (1,231) | **–** | (84) | **(922)** | (1,951) |
| Total reductions due to net repayments and other | **(995)** | (1,183) | **(455)** | (1,393) | **–** | (84) | **(1,450)** | (2,660) |
| Write-offs (4) | | | | | | | | |
| Consumer | **(159)** | (197) | **(51)** | (51) | **–** | – | **(210)** | (248) |
| Business and government | **(51)** | (96) | **(102)** | (240) | **–** | – | **(153)** | (336) |
| Total write-offs | **(210)** | (293) | **(153)** | (291) | **–** | – | **(363)** | (584) |
| Gross impaired loans and acceptances, end of year | | | | | | | | |
| Consumer | **391** | 382 | **216** | 256 | **–** | – | **607** | 638 |
| Business and government | **767** | 813 | **604** | 718 | **13** | – | **1,384** | 1,531 |
| Total GIL, end of year | **1,158** | 1,195 | **820** | 974 | **13** | – | **1,991** | 2,169 |
| **Condition Ratios** | | | | | | | | |
| GIL as a % of Gross Loans | | | | | | | | |
| Consumer | **0.18** | 0.19 | **0.86** | 1.19 | **–** | – | **0.25** | 0.29 |
| Business and government | **0.57** | 0.71 | **0.34** | 0.54 | **0.12** | – | **0.43** | 0.60 |
| GIL as a % of gross loans and acceptances | **0.33** | 0.38 | **0.41** | 0.63 | **0.12** | – | **0.35** | 0.46 |

(1) Gross Impaired Loans excludes Purchased Credit Impaired Loans.
(2) Segmented credit information by geographic area is based upon the country of ultimate risk.
(3) Includes impaired amounts returned to performing status, sales, repayments, the impact of foreign exchange fluctuations and offsets for consumer write-offs which have not been recognized in formations.
(4) Excludes certain loans that are written off directly and not classified as new formations.

# Table 9: Changes in Allowance for Credit Losses – Segmented Information (1)

| ($ millions, except as noted) | Canada | | United States | | Other countries | | Total | |
|---|---|---|---|---|---|---|---|---|
| As at October 31 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| **Allowance for credit losses (ACL), beginning of year** | | | | | | | | |
| Consumer | **907** | 1,073 | **133** | 217 | **–** | – | **1,040** | 1,290 |
| Business and government | **792** | 782 | **1,111** | 1,696 | **15** | 46 | **1,918** | 2,524 |
| Total ACL, beginning of year | **1,699** | 1,855 | **1,244** | 1,913 | **15** | 46 | **2,958** | 3,814 |
| Provision for credit losses (2) | | | | | | | | |
| Consumer | **268** | 201 | **45** | (48) | **–** | – | **313** | 153 |
| Business and government | **48** | 117 | **(43)** | (211) | **(7)** | (32) | **(2)** | (126) |
| Total provision for credit losses | **316** | 318 | **2** | (259) | **(7)** | (32) | **311** | 27 |
| Recoveries | | | | | | | | |
| Consumer | **105** | 127 | **60** | 64 | **–** | – | **165** | 191 |
| Business and government | **–** | 23 | **50** | 19 | **–** | – | **50** | 42 |
| Total recoveries | **105** | 150 | **110** | 83 | **–** | – | **215** | 233 |
| Write-offs | | | | | | | | |
| Consumer | **(390)** | (442) | **(69)** | (72) | **–** | – | **(459)** | (514) |
| Business and government | **(51)** | (96) | **(102)** | (240) | **–** | – | **(153)** | (336) |
| Total write-offs | **(441)** | (538) | **(171)** | (312) | **–** | – | **(612)** | (850) |
| Other, including foreign exchange rate changes | | | | | | | | |
| Consumer | **(39)** | (52) | **4** | (28) | **–** | – | **(35)** | (80) |
| Business and government | **8** | (34) | **146** | (153) | **7** | 1 | **161** | (186) |
| Total other, including foreign exchange rate changes | **(31)** | (86) | **150** | (181) | **7** | 1 | **126** | (266) |
| **ACL, end of year** | | | | | | | | |
| Consumer | **851** | 907 | **173** | 133 | **–** | – | **1,024** | 1,040 |
| Business and government | **797** | 792 | **1,162** | 1,111 | **15** | 15 | **1,974** | 1,918 |
| Total ACL, end of year | **1,648** | 1,699 | **1,335** | 1,244 | **15** | 15 | **2,998** | 2,958 |
| Net write-offs as a % of average loans and acceptances (3) | **un** | un | **un** | un | **un** | un | **0.08** | 0.13 |

# Table 10: Allocation of Allowance for Credit Losses – Segmented Information (1)(4)

| ($ millions, except as noted) | Canada | | United States | | Other countries | | Total | |
|---|---|---|---|---|---|---|---|---|
| As at October 31 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 | **2022** | 2021 |
| Consumer | | | | | | | | |
| Residential mortgages | **7** | 7 | **3** | 5 | **–** | – | **10** | 12 |
| Consumer instalment and other personal loans | **88** | 76 | **14** | 15 | **–** | – | **102** | 91 |
| Total consumer | **95** | 83 | **17** | 20 | **–** | – | **112** | 103 |
| Business and government | **268** | 262 | **159** | 133 | **5** | – | **432** | 395 |
| Total allowance for credit losses on impaired loans | **363** | 345 | **176** | 153 | **5** | – | **544** | 498 |
| Allowance for credit losses on performing loans | **1,102** | 1,143 | **959** | 910 | **12** | 13 | **2,073** | 2,066 |
| Allowance for credit losses | **1,465** | 1,488 | **1,135** | 1,063 | **17** | 13 | **2,617** | 2,564 |
| **Coverage Ratios** | | | | | | | | |
| Allowance for credit losses on impaired loans as a % of gross impaired loans and acceptances | | | | | | | | |
| Total | **31.3** | 28.9 | **21.5** | 15.7 | **38.5** | – | **27.3** | 23.0 |
| Consumer | **24.3** | 21.7 | **7.9** | 7.8 | **–** | – | **18.5** | 16.1 |
| Business and government | **34.9** | 32.2 | **26.3** | 18.5 | **38.5** | – | **31.2** | 25.8 |

(1) Segmented credit information by geographic area is based upon country of ultimate risk.
(2) Excludes provision for credit losses on other assets.
(3) Aggregate Net Loans and Acceptances balances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments).
(4) Amounts exclude Allowance for Credit Losses related to off-balance sheet instruments, which are reported in Other Liabilities.

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## Table 11: Allowance for Credit Losses on Impaired Loans – Segmented Information

| ($ millions)<br>As at October 31 | 2022 | 2021 |
|---|---|---|
| **Business and Government** | | |
| **Allowance for Credit Losses on Impaired Loans by Industry** | | |
| Commercial real estate | **11** | 11 |
| Construction (non-real estate) | **25** | 9 |
| Retail trade | **81** | 90 |
| Wholesale trade | **31** | 36 |
| Agriculture | **13** | 23 |
| Communications | **–** | 5 |
| Financing products | **–** | – |
| Manufacturing | **41** | 47 |
| Mining | **5** | – |
| Oil and gas | **39** | 77 |
| Transportation | **10** | 17 |
| Utilities | **1** | 1 |
| Forest products | **1** | 2 |
| Service industries | **144** | 73 |
| Financial | **29** | 3 |
| Government | **–** | – |
| Other | **1** | 1 |
| Total business and government (1) | **432** | 395 |

## Table 12: Provision for Credit Losses – Segmented Information

| ($ millions)<br>For the year ended October 31 | 2022 | 2021 |
|---|---|---|
| **Consumer** | | |
| Residential mortgages | **7** | 16 |
| Cards | **190** | 194 |
| Consumer instalment and other personal loans | **151** | 158 |
| Total consumer | **348** | 368 |
| **Business and Government** | | |
| Commercial real estate | **2** | 7 |
| Construction (non-real estate) | **20** | 3 |
| Retail trade | **4** | 38 |
| Wholesale trade | **7** | 18 |
| Agriculture | **(2)** | 2 |
| Communications | **(5)** | (2) |
| Financing products | **–** | – |
| Manufacturing | **10** | 41 |
| Mining | **5** | (9) |
| Oil and gas | **(32)** | 18 |
| Transportation | **(7)** | 11 |
| Utilities | **1** | 1 |
| Forest products | **–** | 2 |
| Service industries | **133** | 30 |
| Financial | **16** | (4) |
| Government | **–** | – |
| Other | **2** | 1 |
| Total business and government | **154** | 157 |
| Total provision for credit losses on impaired loans | **502** | 525 |
| Provision for credit losses on performing loans | **(189)** | (505) |
| | **313** | 20 |
| **Performance Ratios** (%) | | |
| PCL-to-average net loans and acceptances | **0.06** | – |
| PCL on impaired loans-to-segmented average net loans and acceptances | | |
| Consumer | **0.15** | 0.17 |
| Business and government | **0.05** | 0.06 |
| PCL on impaired loans-to-average net loans and acceptances | **0.10** | 0.11 |

(1) Amounts exclude Allowance for Credit Losses related to off-balance sheet instruments, which are reported in Other Liabilities.

# Table 13: Average Deposits

| | | **2022** | | 2021 |
|---|---|---|---|---|
| ($ millions, except as noted) | **Average balance** | **Average rate paid (%)** | Average balance | Average rate paid (%) |
| **Deposits Booked in Canada** | | | | |
| Demand deposits – interest bearing | **51,184** | **1.84** | 48,372 | 0.58 |
| Demand deposits – non-interest bearing | **84,280** | **–** | 74,505 | – |
| Payable after notice | **130,812** | **0.61** | 122,916 | 0.20 |
| Payable on a fixed date | **205,284** | **1.74** | 173,030 | 1.31 |
| Total deposits booked in Canada | **471,560** | **1.13** | 418,823 | 0.67 |
| **Deposits Booked in the United States and Other Countries** | | | | |
| Banks located in the United States and other countries (1) | **19,303** | **1.29** | 21,237 | 0.36 |
| Governments and institutions in the United States and other countries | **8,404** | **0.44** | 8,705 | 0.16 |
| Other demand deposits | **18,816** | **0.52** | 17,778 | 0.08 |
| Other deposits payable after notice or on a fixed date | **209,611** | **0.48** | 211,507 | 0.15 |
| Total deposits booked in the United States and other countries | **256,134** | **0.55** | 259,227 | 0.16 |
| **Total average deposits** (2) | **727,694** | **0.92** | 678,050 | 0.47 |

As at October 31, 2022 and 2021: deposits by foreign depositors in our Canadian bank offices amounted to $95,292 million and $58,396 million, respectively.

(1) Includes regulated and central banks.

(2) Average deposits payable on a fixed date included $101 million, $27,287 million and $17,394 million of federal funds purchased, commercial paper issued and other deposit liabilities, respectively, as at October 31, 2022 ($101 million, $14,740 million and $18,893 million, respectively, as at October 31, 2021).

# Glossary of Financial Terms

**Adjusted Earnings and Measures**

- *Adjusted Revenue* – calculated as revenue excluding the impact of certain non-recurring items, and adjusted net revenue is adjusted revenue, net of CCPB, as set out in the Non-GAAP and Other Financial Measures section.
- *Adjusted Non-Interest Expense* – calculated as non-interest expense excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.
- *Adjusted Net Income* – calculated as net income excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.

Management considers both reported and adjusted results to be useful in assessing underlying ongoing business performance.

**Adjusted Effective Tax Rate** is calculated as adjusted provision for income taxes divided by adjusted income before provision for income taxes.

**Allowance for Credit Losses** represents an amount deemed appropriate by management to absorb credit-related losses on loans and acceptances and other credit instruments, in accordance with applicable accounting standards. *Allowance on Performing Loans* is maintained to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. *Allowance on Impaired Loans* is maintained to reduce the carrying value of individually identified impaired loans to the expected recoverable amount.

**Assets under Administration and Assets under Management** refers to assets administered or managed by a financial institution that are beneficially owned by clients and therefore not reported on the balance sheet of the administering or managing financial institution.

**Asset-Backed Commercial Paper (ABCP)** is a short-term investment. The commercial paper is backed by assets such as trade receivables, and is generally used for short-term financing needs.

**Average annual total shareholder return (TSR)** represents the average annual total return earned on an investment in BMO common shares made at the beginning of a fixed period. The return includes the change in share price and assumes dividends received were reinvested in additional common shares.

**Average Earning Assets** represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans over a one-year period.

**Average Net Loans and Acceptances** is the daily or monthly average balance of loans and customers' liability under acceptances, net of the allowance for credit losses, over a one-year period.

**Bail-In Debt** is senior unsecured debt subject to the Canadian Bail-In Regime. Bail-in debt includes senior unsecured debt issued directly by the bank on or after September 23, 2018, which has an original term greater than 400 days and is marketable, subject to certain exceptions. Some or all of this debt may be statutorily converted into common shares of the bank under the Bail-In Regime if the bank enters resolution.

**Bankers' Acceptances (BAs)** are bills of exchange or negotiable instruments drawn by a borrower for payment at maturity and accepted by a bank. BAs constitute a guarantee of payment by the bank and can be traded in the money market. The bank earns a "stamping fee" for providing this guarantee.

**Basis Point** is one one-hundredth of a percentage point.

**Common Equity Tier 1 (CET1) Capital** comprises common shareholders' equity net of deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items, which may include a portion of expected credit loss provisions.

**Common Equity Tier 1 (CET1) Ratio** is calculated as CET1 Capital, which comprises common shareholders' equity, net of deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items, which may include a portion of expected credit loss provisions, divided by risk-weighted assets. The CET1 Ratio is calculated in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.

**Common Shareholders' Equity** is the most permanent form of capital. For regulatory capital purposes, common shareholders' equity comprises common shareholders' equity, net of capital deductions.

**Credit and Counterparty Risk** is the potential for credit loss due to the failure of an obligor (i.e., a borrower, endorser, guarantor or counterparty) to repay a loan or honour another predetermined financial obligation.

**Derivatives** are contracts, requiring no initial or little investment, with a value that is derived from movements in underlying interest or foreign exchange rates, equity or commodity prices or other indices. Derivatives are used to transfer, modify or reduce current or expected risks from changes in rates and prices.

**Dividend Payout Ratio** represents common share dividends as a percentage of net income available to common shareholders. It is computed by dividing dividends per share by basic earnings per share. Adjusted dividend payout ratio is calculated in the same manner, using adjusted net income.

**Earnings per Share (EPS)** is calculated by dividing net income, after deducting preferred share dividends and distributions on other equity instruments, by the average number of common shares outstanding. Adjusted EPS is calculated in the same manner, using adjusted net income. Diluted EPS, which is BMO's basis for measuring performance, adjusts for possible conversions of financial instruments into common shares if those conversions would reduce EPS, and is more fully explained in Note 23 of the consolidated financial statements.

**Earnings Sensitivity** is a measure of the impact of potential changes in interest rates on the projected 12-month pre-tax net income of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

**Economic Capital** is an expression of the enterprise's capital demand requirement relative to its view of the economic risks in its underlying business activities. It represents management's estimation of the likely magnitude of economic losses that could occur should severely adverse situations arise. Economic capital is calculated for various types of risk, including credit, market (trading and non-trading), operational non-financial, business and insurance, based on a one-year time horizon using a defined confidence level.

**Economic Value Sensitivity** is a measure of the impact of potential changes in interest rates on the market value of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

**Efficiency Ratio (or Expense-to-Revenue Ratio)** is a measure of productivity. It is calculated as non-interest expense divided by total revenue on a taxable equivalent basis in the operating groups), expressed as a percentage.

**Efficiency Ratio, net of CCPB**, is calculated as non-interest expense divided by total revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB). The adjusted efficiency ratio, net of CCPB, is calculated in the same manner, utilizing adjusted revenue, net of CCPB, and adjusted non-interest expense.

**Environmental and Social Risk** is the potential for loss or harm, directly or indirectly, resulting from environmental or social factors that impact BMO or its customers, and BMO's impact on the environment.

**Fair Value** is the amount of consideration that would be agreed upon in an arm's-length transaction between knowledgeable, willing parties who are under no compulsion to act in an orderly market transaction.

**Forwards and Futures** are contractual agreements to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a specified price and date in the future. Forwards are customized contracts transacted in the over-the-counter market. Futures are transacted in standardized amounts on regulated exchanges and are subject to daily cash margin requirements.

**Gross impaired loans and acceptances (GIL)** are calculated as the credit impaired balance of loans and customers' liability under acceptances, excluding purchased credit impaired loans.

**Hedging** is a risk management technique used to neutralize, manage or offset interest rate, foreign currency, equity, commodity or credit risk exposures arising from normal banking activities.

**Impaired Loans** are loans for which there is no longer reasonable assurance of the timely collection of principal or interest.

**Incremental Risk Charge (IRC)** complements the VaR and SVaR metrics and represents an estimate of the default and migration risks of non-securitization products held in the trading book with exposure to interest rate risk, measured over a one-year horizon at a 99.9% confidence level.

**Insurance Risk** is the potential for loss as a result of actual experience differing from that assumed when an insurance product was designed and priced, and comprises claims risk, policyholder behaviour risk and expense risk.

**Insurance Revenue, net of CCPB,** is insurance revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

**Legal and Regulatory Risk** is the potential for loss or harm resulting from a failure to comply with laws or satisfy contractual obligations or regulatory requirements. This includes the risk of failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legal or regulatory requirements; enforce or comply with contractual terms; assert non-contractual rights; effectively manage disputes; or act in a manner so as to maintain our reputation.

**Leverage Exposures (LE)** consist of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

**Leverage Ratio** reflects Tier 1 Capital divided by LE.

**Liquidity and Funding Risk** is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. Financial commitments include liabilities to depositors and suppliers, as well as lending, investment and pledging commitments.

**Liquidity Coverage Ratio (LCR)** is a Basel III regulatory metric calculated as the ratio of high-quality liquid assets to total net stressed cash outflows over a thirty-day period under a stress scenario prescribed by OSFI.

**Market Risk** is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, and credit spreads, and includes the risk of credit migration and default in our trading book.

**Mark-to-Market** represents the valuation of financial instruments at fair value (as defined above) as of the balance sheet date.

**Model Risk** is the potential for adverse consequences resulting from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making and damage to reputation.

**Net Interest Income** comprises earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits. Net interest income, excluding trading, is presented on a basis that excludes trading-related interest income.

**Net Interest Margin** is the ratio of net interest income to average earning assets, expressed as a percentage or in basis points. Net interest margin, excluding trading, is computed in the same manner, excluding trading-related interest income and earning assets.

**Net Non-Interest Revenue** is non-interest revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

**Net Promoter Score (NPS)** is the percentage of surveyed customers who would recommend BMO to a friend or colleague. Data is gathered in a survey that uses a 0–10 point scale. "Detractors" are defined as those who provide a rating of 0–6, "Passives" are defined as those who provide a rating of 7 or 8, and "Promoters" are defined as those who provide a rating of 9 or 10. The NPS score is calculated by subtracting the percentage of "Detractors" from the percentage of "Promoters".

**Notional Amount** refers to the principal amount used to calculate interest and other payments under derivative contracts. The principal amount does not change hands under the terms of a derivative contract, except in the case of cross-currency swaps.

**Off-Balance Sheet Financial Instruments** consist of a variety of financial arrangements offered to clients, which include credit derivatives, written put options, backstop liquidity facilities, standby letters of credit, performance guarantees, credit enhancements, commitments to extend credit, securities lending, documentary and commercial letters of credit, and other indemnifications.

**Office of the Superintendent of Financial Institutions (OSFI) Canada** is the government agency responsible for regulating banks, insurance companies, trust companies, loan companies and pension plans in Canada.

**Operating Leverage** is the difference between revenue and non-interest expense growth rates. Adjusted operating leverage is the difference between adjusted revenue and adjusted non-interest expense growth rates.

**Operating Leverage, net of CCPB,** is the difference between revenue, net of CCPB (net revenue) and non-interest expense growth rates. Adjusted net operating leverage, is the difference between adjusted revenue, net of CCPB, and adjusted non-interest expense growth rates. The bank evaluates performance using adjusted revenue, net of CCPB.

**Operational Non-Financial Risk (ONFR)** encompasses a wide range of non-financial risks, including those related to business change, customer trust, reputation and data that can result in financial loss. These losses can stem from inadequate or failed internal processes or systems, human error or misconduct, and external events that may directly or indirectly impact the fair value of assets we fold in our credit or investment portfolios. Examples of these risks include cyber and cloud security risk, technology risk, fraud risk, business continuity risk and human resources risk, but exclude legal and regulatory risk, credit risk, market risk, liquidity risk and other types of financial risk.

**Options** are contractual agreements that convey to the purchaser the right but not the obligation to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a fixed future date or at any time within a fixed future period.

**Pre-Provision, Pre-Tax Earnings (PPPT)** is calculated as income before the provision for income taxes and provision for/(recovery of) credit losses. We use PPPT on both a reported and adjusted basis to assess our ability to generate sustained earnings growth excluding credit losses, which are impacted by the cyclical nature of a credit cycle.

**Provision for Credit Losses (PCL)** is a charge to income that represents an amount deemed adequate by management to fully provide for impairment in a portfolio of loans and acceptances and other credit instruments, given the composition of the portfolio, the probability of default, the economic environment and the allowance for credit losses already established. PCL can comprise both a provision for credit losses on impaired loans and a provision for credit losses on performing loans. For more information, refer to the Credit and Counterparty Risk – Provision for Credit Losses and Critical Accounting Estimates and Judgments – Allowance for Credit Losses sections and Note 4 of the consolidated financial statements.

**Reputation Risk** is the potential for loss or harm to the BMO brand. It can arise even if other risks are managed effectively.

**Return on Equity or Return on Common Shareholders' Equity (ROE)** is calculated as net income, less preferred dividends and distributions on other equity instruments, as a percentage of average common shareholders' equity. Common shareholders' equity comprises common share capital, contributed surplus, accumulated other comprehensive income (loss) and retained earnings. Adjusted ROE is calculated using adjusted net income rather than net income.

**Return on Tangible Common Equity (ROTCE)** is calculated as net income available to common shareholders, adjusted for the amortization of acquisition-related intangible assets, as a percentage of average tangible common equity. Adjusted ROTCE is calculated using adjusted net income rather than net income.

**Risk-Weighted Assets (RWA)** are defined as on-balance sheet and off-balance sheet exposures that are risk-weighted based on guidelines established by OSFI. The measure is used for capital management and regulatory reporting purposes.

**Securities Borrowed or Purchased under Resale Agreements** are low-cost, low-risk instruments, often supported by the pledge of cash collateral, which arise from transactions that involve the borrowing or purchasing of securities.

**Securities Lent or Sold under Repurchase Agreements** are low-cost, low-risk liabilities, often supported by cash collateral, which arise from transactions that involve the lending or selling of securities.

**Securitization** is the practice of selling pools of contractual debts, such as residential mortgages, auto loans and credit card debt obligations, to third parties or trusts, which then typically issue a series of asset-backed securities to investors to fund the purchase of the contractual debts.

**Strategic Risk** arises from the possibility that the bank could experience financial loss or other types of harm due to changes in the external business environment and failure to respond effectively to these changes as a result of inaction, inappropriate strategies or poor implementation of strategies. Strategic risk also includes business risk, which arises from the specific business activities of the enterprise, and the effects these could have on its earnings.

**Stressed Value at Risk (SVaR)** measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period, with model inputs calibrated to historical data from a period of significant financial stress. SVaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

**Structured Entities (SEs)** include entities for which voting or similar rights are not the dominant factor in determining control of the entity. BMO is required to consolidate a SE if it controls the entity by having power over the entity, exposure to variable returns as a result of its involvement and the ability to exercise power to affect the amount of those returns.

**Structural (Non-Trading) Market Risk** comprises interest rate risk arising from banking activities (loans and deposits) and foreign exchange risk arising from foreign currency operations and exposures.

**Swaps** are contractual agreements between two parties to exchange a series of cash flows. The various swap agreements that BMO enters into are as follows:

- *Commodity swaps* – counterparties generally exchange fixed-rate and floating rate payments based on a notional value of a single commodity.
- *Credit default swaps* – one counter party pays the other a fee in exchange for an agreement by the other counterparty to make a payment if a credit event occurs, such as bankruptcy or failure to pay.
- *Cross-currency interest rate swaps* – fixed rate and floating-rate interest payments and principal amounts are exchanged in different currencies. Cross-currency swaps – fixed-rate interest payments and principal amounts are exchanged in different currencies.
- *Equity swaps* – counterparties exchange the return on an equity security or a group of equity securities for a return based on a fixed or floating interest rate or the return on another equity security or group of equity securities.
- *Interest rate swaps* – counterparties generally exchange fixed-rate and floating rate interest payments based on a notional value in a single currency.
- *Total return swaps* – one counterparty agrees to pay or receive from the other cash amounts based on changes in the value of a reference asset or group of assets, including any returns such as interest earned on these assets, in exchange for amounts that are based on prevailing market funding rates.

**Tangible Common Equity** is calculated as common shareholders' equity, less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities.

**Taxable Equivalent Basis (teb):** Operating group revenue is presented on a taxable equivalent basis (teb). Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. The effective tax rate is also analyzed on a teb basis for consistency of approach, with the offset to operating segment adjustments recorded in Corporate Services.

**Tier 1 Capital** comprises CET1 Capital and **Additional Tier 1 (AT1) Capital**. AT1 Capital consists of preferred shares and other AT1 Capital instruments, less regulatory deductions.

**Tier 1 Capital Ratio** reflects Tier 1 Capital divided by risk-weighted assets.

**Tier 2 Capital** comprises subordinated debentures and may include certain credit loss provisions, less regulatory deductions.

**Total Capital** includes Tier 1 and Tier 2 Capital.

**Total Capital Ratio** reflects Total Capital divided by risk-weighted assets.

**Total Loss Absorbing Capacity (TLAC)** comprises Total Capital and senior unsecured debt subject to the Canadian Bail-In Regime, less regulatory deductions. The largest Canadian banks are required to meet the minimum TLAC Ratio and TLAC Leverage Ratio effective November 1, 2021, as calculated under OSFI's TLAC Guideline.

**Total Loss Absorbing Capacity (TLAC) Ratio** reflects TLAC divided by risk-weighted assets.

**Total Loss Absorbing Capacity (TLAC) Leverage Ratio** reflects TLAC divided by leverage exposures.

**Total Shareholder Return:** The annual total shareholder return (TSR) represents the average annual total return earned on an investment in BMO common shares made at the beginning of the respective period. The return includes the change in share price and assumes dividends received were reinvested in additional common shares.

**Trading and Underwriting Market Risk** is associated with buying and selling financial products in the course of meeting customer requirements, including market-making and related financing activities, and assisting clients to raise funds by way of securities issuance.

**Trading-Related Revenue** includes net interest income and non-interest revenue earned from on-balance sheet and off-balance sheet positions undertaken for trading purposes. The management of these positions typically includes marking them to market on daily basis. Trading-related revenue also includes income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts.

**Value-at-Risk (VaR)** measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period. VaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

# Statement of Management's Responsibility for Financial Information

Management of Bank of Montreal (the bank) is responsible for the preparation and presentation of the annual consolidated financial statements, Management's Discussion and Analysis (MD&A) and all other information in the Annual Report.

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board and meet the applicable requirements of the Canadian Securities Administrators (CSA) and the Securities and Exchange Commission (SEC) in the United States. The financial statements also comply with the provisions of the *Bank Act (Canada)* and related regulations, including interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions Canada. The MD&A has been prepared in accordance with the requirements of securities regulators, including National Instrument 51-102 *Continuous Disclosure Obligations* of the CSA.

The consolidated financial statements and information in the MD&A necessarily include amounts based on informed judgments and estimates of the expected effects of current events and transactions with appropriate consideration to materiality. In addition, in preparing the financial information we must interpret the requirements described above, make determinations as to the relevancy of information to be included, and make estimates and assumptions that affect reported information. The MD&A also includes information regarding the impact of current transactions and events, sources of liquidity and capital resources, operating trends, risks and uncertainties. Actual results in the future may differ materially from our present assessment of this information because events and circumstances in the future may not occur as expected.

The financial information presented in the bank's Annual Report is consistent with that in the consolidated financial statements.

In meeting our responsibility for the reliability and timeliness of financial information, we maintain and rely on a comprehensive system of internal controls, including organizational and procedural controls, disclosure controls and procedures, and internal control over financial reporting. Our system of internal controls includes written communication of our policies and procedures governing corporate conduct and risk management; comprehensive business planning; effective segregation of duties; delegation of authority and personal accountability; escalation of relevant information for decisions regarding public disclosure; careful selection and training of personnel; and accounting policies that we regularly update. Our internal controls are designed to provide reasonable assurance that transactions are authorized, assets are safeguarded and proper records are maintained and that we are in compliance with all regulatory requirements. The system of internal controls is further supported by a compliance function, which is designed to ensure that we and our employees comply with securities legislation and conflict of interest rules, and by an internal audit staff, which conducts periodic audits of all aspects of our operations.

As of October 31, 2022, we, as the bank's Chief Executive Officer and Chief Financial Officer, have determined that the bank's internal control over financial reporting is effective. We have certified Bank of Montreal's annual filings with the CSA and with the SEC pursuant to National Instrument 52-109, *Certification of Disclosure in Issuers' Annual and Interim Filings* and the *Securities Exchange Act of 1934*.

In order to provide their audit opinions on our consolidated financial statements and on the bank's internal control over financial reporting, the Shareholders' Auditors audit our system of internal controls over financial reporting and conduct work to the extent that they consider appropriate. Their audit opinion on the bank's internal control over financial reporting as of October 31, 2022 is set forth on page 140.

The Board of Directors, based on recommendations from its Audit and Conduct Review Committee, reviews and approves the financial information contained in the Annual Report, including the MD&A. The Board of Directors and its relevant committees oversee management's responsibilities for the preparation and presentation of financial information, maintenance of appropriate internal controls, compliance with legal and regulatory requirements, management and control of major risk areas, and assessment of significant and related party transactions.

The Audit and Conduct Review Committee, which is comprised entirely of independent directors, is also responsible for selecting the Shareholders' Auditors and reviewing the qualifications, independence and performance of both the Shareholders' Auditors and internal audit. The Shareholders' Auditors and the bank's Chief Auditor have full and free access to the Board of Directors, its Audit and Conduct Review Committee and other relevant committees to discuss audit, financial reporting and related matters.

The Office of the Superintendent of Financial Institutions Canada conducts examinations and inquiries into the affairs of the bank as are deemed necessary to ensure that the provisions of the *Bank Act*, with respect to the safety of the depositors, are being duly observed and that the bank is in sound financial condition.

KPMG LLP, the independent auditors appointed by the shareholders of the bank who have audited the consolidated financial statements, have also audited the effectiveness of the bank's internal control over financial reporting as at October 31, 2022 and have issued their report below.

**Darryl White**
Chief Executive Officer

**Tayfun Tuzun**
Chief Financial Officer

Toronto, Canada
December 1, 2022

# Independent Auditor's Report

## To the Shareholders and the Board of Directors of Bank of Montreal

***Opinion***

We have audited the consolidated financial statements of Bank of Montreal (the Bank), which comprise:

- the consolidated balance sheets as at October 31, 2022 and October 31, 2021;
- the consolidated statements of income for the years then ended;
- the consolidated statements of comprehensive income for the years then ended;
- the consolidated statements of changes in equity for the years then ended;
- the consolidated statements of cash flows for the years then ended;
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the consolidated financial statements).

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Bank as at October 31, 2022 and October 31, 2021, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

***Basis for Opinion***

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our auditor's report.

We are independent of the Bank in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

***Key Audit Matters***

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the year ended October 31, 2022. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have determined the matters described below to be the key audit matters to be communicated in our auditor's report.

**Assessment of the Allowances for Credit Losses for Loans**

Refer to Notes 1 and 4 to the consolidated financial statements.

The Bank's allowances for credit losses (ACL) as at October 31, 2022 were $2,998 million. The Bank's ACL consists of allowances for impaired loans and allowances for performing loans (APL), both calculated under the IFRS 9 Financial Instruments expected credit losses framework. APL is calculated for each exposure in the loan portfolio as a function of the key modelled inputs being probability of default (PD), exposure at default (EAD) and loss given default (LGD). In establishing APL, the Bank's methodology attaches probability weightings to three economic scenarios, which represent the Bank's judgment about a range of forecast economic variables – a base case scenario being the Bank's view of the most probable outcome, as well as benign and adverse scenarios. Where there has been a significant increase in credit risk, lifetime APL is recorded; otherwise 12 months of APL are generally recorded. The Bank's methodology for determining significant increase in credit risk is based on the change in PD between the origination date and reporting date and is assessed using probability weighted scenarios. The Bank uses experienced credit judgment (ECJ) to reflect factors not captured in the results produced by the APL models.

We identified the assessment of the ACL for loans as a key audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the Bank's key modelled inputs, methodology and judgments and their resulting impact on the APL, as described above, including the impact of the current macro-economic environment. Assessing the APL also required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this key audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's APL process with the involvement of credit risk, economics, and information technology professionals with specialized skills, industry knowledge and relevant experience. This included internal controls related to (1) monitoring and periodic validation of the models used to derive the key modelled inputs, (2) monitoring of the methodology for identifying significant increase in credit risk, and (3) review of the economic variables, probability weighting of scenarios and ECJ. We also tested the controls over the Bank's APL process related to loan reviews for determination of loan risk grades for wholesale loans. We involved credit risk and economics professionals with specialized skills, industry knowledge and relevant experience, who assisted in evaluating the (1) key modelled inputs and APL methodology including the determination of significant increases in credit risk by evaluating the methodology for compliance with IFRS 9 and re-calculating model monitoring tests in respect of the key modelled inputs and thresholds used for significant increases in credit risk, (2) economic variables and probability weighting of scenarios used in the models by assessing the variables and scenarios against external economic data, and (3) ECJ overlays to the APL used by the Bank by applying our knowledge of the industry and credit judgment to assess management's judgments. For a selection of wholesale loans, we developed an independent estimate of the loan risk grades using the Bank's borrower risk rating scale and compared that to the Bank's assigned loan risk grade.

**Assessment of the Measurement of the Fair Value of Certain Securities**

Refer to Notes 1, 3 and 17 to the consolidated financial statements.

The Bank's securities portfolio included $165,379 million of securities as at October 31, 2022 that are measured at fair value. Included in these amounts are certain securities for which the Bank determines fair value using models that use significant unobservable inputs and third-party net asset valuations (NAVs). Unobservable inputs require the use of significant judgment. Certain of the significant unobservable inputs used in the valuation of such securities are NAVs and prepayment rates.

We identified the assessment of the measurement of the fair value of certain securities as a key audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant unobservable inputs. Significant auditor attention and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this key audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process to determine the fair value of certain securities with the involvement of valuation and information technology professionals with specialized skills, industry knowledge and relevant experience. This included controls related to (1) the assessment of rate sources used in independent price verification, and (2) segregation of duties and access controls. We also evaluated the design and tested the operating effectiveness of the controls related to the 1) review of third-party NAVs, and 2) independent price verification.

We tested, with involvement of valuation professionals with specialized skills, industry knowledge and relevant experience, the fair value of a selection of securities, for which prepayment rates are used in valuation, by developing an independent estimate of fair value and comparing it to the fair value determined by the Bank; and for a selection of securities, we compared the NAVs to external information or developed an independent estimate of fair value and comparing it to the fair value determined by the Bank.

**Assessment of Income Tax Uncertainties**

Refer to Notes 1 and 22 to the consolidated financial statements.

In determining the provision for income taxes, the Bank interprets tax legislation, case law and administrative positions, and, based on its judgment, records a provision for an estimate of the amount required to settle tax obligations.

We identified the assessment of income tax uncertainties as a key audit matter. Significant auditor judgment was required because there was a high degree of subjectivity in assessing the need to record a provision, based on interpretation of tax legislation, case law and administrative positions, for these uncertainties and estimating the amount of such provision, if necessary. This required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this key audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process for evaluating income tax uncertainties with the involvement of tax professionals with specialized skills, industry knowledge and relevant experience. This included controls related to the 1) identification of tax uncertainties based on interpretation of tax legislation, case law and administrative positions, and 2) determination of the best estimate of the provision required, if any, to settle these uncertainties. We involved tax professionals with specialized skills, industry knowledge and relevant experience, who assisted in 1) evaluating, based on their knowledge and experience, the Bank's interpretations of tax legislation, case law and administrative positions and the assessment of certain tax uncertainties and expected outcomes, including, if applicable, the measurement thereof, 2) reading advice obtained by the Bank from external specialists and evaluating its impact on the Bank's provision, if necessary, and 3) reading correspondence with taxation authorities and evaluating its impact on the Bank's provision, if necessary.

**Assessment of Insurance-related Liabilities**

Refer to Notes 1 and 14 to the consolidated financial statements.

The Bank's insurance-related liabilities as at October 31, 2022 were $11,201 million. The Bank determines the liabilities for life insurance contracts by applying the Canadian Asset Liability Method for Insurance Contracts, which incorporates best-estimate assumptions. Certain significant assumptions include mortality, policy lapses and future investment yields.

We identified the assessment of insurance-related liabilities as a key audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant assumptions. Significant auditor attention and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this key audit matter. With the assistance of actuarial professionals with specialized skills, industry knowledge and relevant experience, we evaluated the design and tested the operating effectiveness of internal controls over the assessment of the significant assumptions. We involved these actuarial professionals also in testing the significant assumptions by examining the Bank's internal and external experience for policy lapses and mortality, and examining management's calculations and comparing certain inputs into the future investment yields to externally available data.

***Other Information***

Management is responsible for the other information. Other information comprises:

- the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions;
- the information, other than the consolidated financial statements and the auditor's report thereon, included in a document entitled the "Annual Report".

Our opinion on the consolidated financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information included in Management's Discussion and Analysis and the Annual Report filed with the relevant Canadian Securities Commissions as at the date of this auditor's report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditor's report. We have nothing to report in this regard.

***Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements***

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRS as issued by the International Accounting Standards Board, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Bank's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Bank or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Bank's financial reporting process.

***Auditor's Responsibilities for the Audit of the Consolidated Financial Statements***

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the consolidated financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Bank's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Bank's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Bank to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Bank to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.
- Determine, from the matters communicated with those charged with governance, those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our auditor's report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

KPMG LLP

**Chartered Professional Accountants, Licensed Public Accountants**

The engagement partner on the audit resulting in this auditor's report is Naveen Kumar Kalia.

Toronto, Canada
December 1, 2022

# Report of Independent Registered Public Accounting Firm

## To the Shareholders and the Board of Directors of Bank of Montreal

***Opinion on the Consolidated Financial Statements***

We have audited the accompanying consolidated balance sheets of Bank of Montreal (the Bank) as of October 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Bank as of October 31, 2022 and 2021, and its financial performance and its cash flows for each of the years then ended, in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Bank's internal control over financial reporting as of October 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated December 1, 2022 expressed an unqualified opinion on the effectiveness of the Bank's internal control over financial reporting.

***Basis for Opinion***

These consolidated financial statements are the responsibility of the Bank's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

***Critical Audit Matters***

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the Audit and Conduct Review Committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

**Assessment of the Allowances for Credit Losses for Loans**

As discussed in Notes 1 and 4 to the consolidated financial statements, the Bank's allowances for credit losses (ACL) as at October 31, 2022 were $2,998 million. The Bank's ACL consists of allowances for impaired loans and allowances for performing loans (APL), both calculated under the IFRS 9 Financial Instruments expected credit losses framework. APL is calculated for each exposure in the loan portfolio as a function of the key modelled inputs being probability of default (PD), exposure at default (EAD) and loss given default (LGD). In establishing APL, the Bank's methodology attaches probability weightings to three economic scenarios, which represent the Bank's judgment about a range of forecast economic variables – a base case scenario being the Bank's view of the most probable outcome, as well as benign and adverse scenarios. Where there has been a significant increase in credit risk, lifetime APL is recorded; otherwise 12 months of APL are generally recorded. The Bank's methodology for determining significant increase in credit risk is based on the change in PD between the origination date and reporting date and is assessed using probability weighted scenarios. The Bank uses experienced credit judgment (ECJ) to reflect factors not captured in the results produced by the APL models.

We identified the assessment of the ACL for loans as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the Bank's key modelled inputs, methodology and judgments and their resulting impact on the APL, as described above, including the impact of the macro-economic environment. Assessing the APL also required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's APL process, with the involvement of credit risk, economics, and information technology professionals with specialized skills, industry knowledge and relevant experience. This included internal controls related to (1) monitoring and periodic validation of the models used to derive the key modelled inputs, (2) monitoring of the methodology for identifying significant increase in credit risk, and (3) review of the economic variables, probability weighting of scenarios and ECJ. We also tested the controls over the Bank's APL process related to loan reviews for determination of loan risk grades for wholesale loans. We involved credit risk and economics professionals with specialized skills, industry knowledge and relevant experience, who assisted in evaluating the (1) key modelled inputs and APL methodology including the determination of significant increases in credit risk by evaluating the methodology for compliance with IFRS 9 and re-calculating model monitoring tests in respect of the key modelled inputs and thresholds used for significant increases in credit risk, (2) economic variables and probability weighting of scenarios used in the models by assessing the variables and scenarios against external economic data, and (3) ECJ overlays to the APL used by the Bank by applying our knowledge of the industry and credit judgment to assess management's judgments. For a selection of wholesale loans, we developed an independent estimate of the loan risk grades using the Bank's borrower risk rating scale, and compared that to the Bank's assigned loan risk grade.

**Assessment of the Measurement of the Fair Value of Certain Securities**

As discussed in Notes 1, 3 and 17 to the consolidated financial statements, the Bank's securities portfolio included $165,379 million of securities as at October 31, 2022 that are measured at fair value. Included in these amounts are certain securities for which the Bank determines fair value using models that use significant unobservable inputs and third-party net asset valuations (NAVs). Unobservable inputs require the use of significant judgment. Certain of the significant unobservable inputs used in the valuation of such securities are NAVs and prepayment rates.

We identified the assessment of the measurement of the fair value of certain securities as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant unobservable inputs. Significant auditor attention and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process to determine the fair value of certain securities with the involvement of valuation and information technology professionals with specialized skills, industry knowledge and relevant experience. This included controls related to (1) the assessment of rate sources used in independent price verification, and (2) segregation of duties and access controls. We also evaluated the design and tested the operating effectiveness of the controls related to the 1) review of third-party NAVs, and 2) independent price verification. We tested, with involvement of valuation professionals with specialized skills, industry knowledge and relevant experience, the fair value of a selection of securities, for which prepayment rates are used in valuation, by developing an independent estimate of fair value and comparing it to the fair value determined by the Bank; and for a selection of securities, we compared the NAVs to external information or developed an independent estimate of fair value, comparing it to the fair value determined by the Bank.

**Assessment of Income Tax Uncertainties**

As discussed in Notes 1 and 22 to the consolidated financial statements, in determining the provision for income taxes, the Bank interprets tax legislation, case law and administrative positions, and, based on its judgment, records a provision for an estimate of the amount required to settle tax obligations.

We identified the assessment of income tax uncertainties as a critical audit matter. Significant auditor judgment was required because there was a high degree of subjectivity in assessing the need to record a provision, based on interpretation of tax legislation, case law and administrative positions, for these uncertainties and estimating the amount of such provision, if necessary. This required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process for evaluating income tax uncertainties with the involvement of tax professionals with specialized skills, industry knowledge and relevant experience. This included controls related to the 1) identification of tax uncertainties based on interpretation of tax legislation, case law and administrative positions, and 2) determination of the best estimate of the provision required, if any, to settle these uncertainties. We involved tax professionals with specialized skills, industry knowledge and relevant experience, who assisted in 1) evaluating, based on their knowledge and experience, the Bank's interpretations of tax legislation, case law and administrative positions and the assessment of certain tax uncertainties and expected outcomes, including, if applicable, the measurement thereof, 2) reading advice obtained by the Bank from external specialists and evaluating its impact on the Bank's provision, if necessary, and 3) reading correspondence with taxation authorities and evaluating its impact on the Bank's provision, if necessary.

**Assessment of Insurance-related Liabilities**

As discussed in Notes 1 and 14 to the consolidated financial statements, the Bank's insurance-related liabilities as at October 31, 2022 were $11,201 million. The Bank determines the liabilities for life insurance contracts by applying the Canadian Asset Liability Method for Insurance Contracts, which incorporates best-estimate assumptions. Certain significant assumptions include mortality, policy lapses and future investment yields.

We identified the assessment of insurance-related liabilities as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant assumptions. Significant auditor attention and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this critical audit matter. With the assistance of actuarial professionals with specialized skills, industry knowledge and relevant experience, we evaluated the design and tested the operating effectiveness of internal controls over the assessment of the significant assumptions. We involved these actuarial professionals also in testing the significant assumptions by examining the Bank's internal and external experience for policy lapses and mortality, and examining management's calculations and comparing certain inputs into the future investment yields to externally available data.

KPMG LLP

**Chartered Professional Accountants, Licensed Public Accountants**

We have served as the Bank's auditor since 2004 and as joint auditor for the prior 14 years.

Toronto, Canada

December 1, 2022

# Report of Independent Registered Public Accounting Firm

## To the Shareholders and Board of Directors of Bank of Montreal

**Opinion on Internal Control over Financial Reporting**

We have audited Bank of Montreal's internal control over financial reporting as of October 31, 2022, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Bank maintained, in all material respects, effective internal control over financial reporting as of October 31, 2022, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Bank as of October 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements) and our report dated December 1, 2022 expressed an unqualified opinion on those consolidated financial statements.

**Basis for Opinion**

The Bank's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting, on page 120 of Management's Discussion and Analysis. Our responsibility is to express an opinion on the Bank's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

**Definition and Limitations of Internal Control Over Financial Reporting**

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

KPMG LLP

**Chartered Professional Accountants, Licensed Public Accountants**
Toronto, Canada
December 1, 2022

# Consolidated Statement of Income

| For the Year Ended October 31 (Canadian $ in millions, except as noted) | 2022 | 2021 |
|---|---|---|
| **Interest, Dividend and Fee Income** | | |
| Loans | **$ 20,464** | $ 15,727 |
| Securities (Note 3) (1) | **5,590** | 3,963 |
| Deposits with banks | **843** | 197 |
| | **26,897** | 19,887 |
| **Interest Expense** | | |
| Deposits | **6,711** | 3,220 |
| Subordinated debt | **227** | 195 |
| Other liabilities (Note 14) | **4,074** | 2,162 |
| | **11,012** | 5,577 |
| **Net Interest Income** | **15,885** | 14,310 |
| **Non-Interest Revenue** | | |
| Securities commissions and fees | **1,082** | 1,107 |
| Deposit and payment service charges | **1,318** | 1,243 |
| Trading revenues (Notes 10 and 17) | **8,250** | 296 |
| Lending fees | **1,440** | 1,391 |
| Card fees | **548** | 442 |
| Investment management and custodial fees | **1,770** | 1,982 |
| Mutual fund revenues | **1,312** | 1,595 |
| Underwriting and advisory fees | **1,193** | 1,421 |
| Securities gains, other than trading (Note 3) | **281** | 591 |
| Foreign exchange gains, other than trading | **181** | 167 |
| Insurance revenue | **(157)** | 1,941 |
| Share of profit (loss) in associates and joint ventures | **274** | 248 |
| Other | **333** | 452 |
| | **17,825** | 12,876 |
| **Total Revenue** | **33,710** | 27,186 |
| **Provision for Credit Losses** (Note 4) | **313** | 20 |
| **Insurance Claims, Commissions and Changes in Policy Benefit Liabilities** (Note 14) | **(683)** | 1,399 |
| **Non-Interest Expense** | | |
| Employee compensation (Notes 20 and 21) | **8,795** | 8,322 |
| Premises and equipment (Note 9) | **3,635** | 3,396 |
| Amortization of intangible assets (Note 11) | **604** | 634 |
| Advertising and business development | **517** | 397 |
| Communications | **278** | 264 |
| Professional fees | **788** | 607 |
| Other | **1,577** | 1,889 |
| | **16,194** | 15,509 |
| **Income Before Provision for Income Taxes** | **17,886** | 10,258 |
| Provision for income taxes (Note 22) | **4,349** | 2,504 |
| **Net Income** | **$ 13,537** | $ 7,754 |
| **Earnings Per Common Share** (Canadian $) (Note 23) | | |
| Basic | **$ 20.04** | $ 11.60 |
| Diluted | **$ 19.99** | $ 11.58 |
| Dividends per common share | **$ 5.44** | $ 4.24 |

(1) Includes interest income on securities measured at fair value through other comprehensive income and amortized cost, calculated using the effective interest rate method, of $1,945 million for the year ended October 31, 2022 ($889 million in 2021).

The accompanying notes are an integral part of these consolidated financial statements.

**Darryl White**
Chief Executive Officer

**Jan Babiak**
Chair, Audit and Conduct Review Committee

# Consolidated Statement of Comprehensive Income

| For the Year Ended October 31 (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| **Net Income** | **$ 13,537** | $ 7,754 |
| **Other Comprehensive Income (Loss), net of taxes** (Note 22) | | |
| Items that may subsequently be reclassified to net income | | |
| Net change in unrealized (losses) on fair value through OCI debt securities | | |
| Unrealized (losses) on fair value through OCI debt securities arising during the year | **(520)** | (161) |
| Reclassification to earnings of (gains) during the year | **(11)** | (43) |
| | **(531)** | (204) |
| Net change in unrealized gains (losses) on cash flow hedges | | |
| (Losses) on derivatives designated as cash flow hedges arising during the year | **(4,999)** | (1,380) |
| Reclassification to earnings of (gains) on derivatives designated as cash flow hedges during the year | **(315)** | (414) |
| | **(5,314)** | (1,794) |
| Net gains (losses) on translation of net foreign operations | | |
| Unrealized gains (losses) on translation of net foreign operations | **3,202** | (2,207) |
| Unrealized gains (losses) on hedges of net foreign operations | **(332)** | 496 |
| Reclassification to earnings of net losses related to divestitures (Note 10) | **29** | – |
| | **2,899** | (1,711) |
| Items that will not be reclassified to net income | | |
| Unrealized gains on fair value through OCI equity securities arising during the year | **1** | 20 |
| Gains on remeasurement of pension and other employee future benefit plans | **659** | 923 |
| Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value | **1,282** | (196) |
| | **1,942** | 747 |
| **Other Comprehensive (Loss), net of taxes** (Note 22) | **(1,004)** | (2,962) |
| **Total Comprehensive Income** | **$ 12,533** | $ 4,792 |

The accompanying notes are an integral part of these consolidated financial statements.

# Consolidated Balance Sheet

| As at October 31 (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| **Assets** | | |
| **Cash and Cash Equivalents** (Note 2) | **$ 87,466** | $ 93,261 |
| **Interest Bearing Deposits with Banks** (Note 2) | **5,734** | 8,303 |
| **Securities** (Note 3) | | |
| Trading | **108,177** | 104,411 |
| Fair value through profit or loss | **13,641** | 14,210 |
| Fair value through other comprehensive income | **43,561** | 63,123 |
| Debt securities at amortized cost | **106,590** | 49,970 |
| Investments in associates and joint ventures | **1,293** | 1,135 |
| | **273,262** | 232,849 |
| **Securities Borrowed or Purchased Under Resale Agreements** (Note 4) | **113,194** | 107,382 |
| **Loans** (Notes 4 and 6) | | |
| Residential mortgages | **148,880** | 135,750 |
| Consumer instalment and other personal | **86,103** | 77,164 |
| Credit cards | **9,663** | 8,103 |
| Business and government | **309,310** | 239,809 |
| | **553,956** | 460,826 |
| Allowance for credit losses (Note 4) | **(2,617)** | (2,564) |
| | **551,339** | 458,262 |
| **Other Assets** | | |
| Derivative instruments (Note 8) | **48,160** | 36,713 |
| Customers' liability under acceptances (Note 12) | **13,235** | 14,021 |
| Premises and equipment (Notes 1 and 9) | **4,841** | 4,454 |
| Goodwill (Note 11) | **5,285** | 5,378 |
| Intangible assets (Note 11) | **2,193** | 2,266 |
| Current tax assets | **1,421** | 1,588 |
| Deferred tax assets (Note 22) | **1,175** | 1,287 |
| Other (Note 12) | **31,894** | 22,411 |
| | **108,204** | 88,118 |
| **Total Assets** | **$ 1,139,199** | $ 988,175 |
| **Liabilities and Equity** | | |
| **Deposits** (Note 13) | **$ 769,478** | $ 685,631 |
| **Other Liabilities** | | |
| Derivative instruments (Note 8) | **59,956** | 30,815 |
| Acceptances (Note 14) | **13,235** | 14,021 |
| Securities sold but not yet purchased (Note 14) | **40,979** | 32,073 |
| Securities lent or sold under repurchase agreements (Note 6) | **103,963** | 97,556 |
| Securitization and structured entities' liabilities (Notes 6 and 7) | **27,068** | 25,486 |
| Current tax liabilities | **425** | 221 |
| Deferred tax liabilities (Note 22) | **102** | 192 |
| Other (Note 14) | **44,805** | 37,764 |
| | **290,533** | 238,128 |
| **Subordinated Debt** (Note 15) | **8,150** | 6,893 |
| **Total Liabilities** | **1,068,161** | 930,652 |
| **Equity** | | |
| Preferred shares and other equity instruments (Note 16) | **6,308** | 5,558 |
| Common shares (Note 16) | **17,744** | 13,599 |
| Contributed surplus | **317** | 313 |
| Retained earnings | **45,117** | 35,497 |
| Accumulated other comprehensive income | **1,552** | 2,556 |
| **Total Equity** | **71,038** | 57,523 |
| **Total Liabilities and Equity** | **$ 1,139,199** | $ 988,175 |

The accompanying notes are an integral part of these consolidated financial statements.

# Consolidated Statement of Changes in Equity

| For the Year Ended October 31 (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| **Preferred Shares and Other Equity Instruments** (Note 16) | | |
| Balance at beginning of year | $ 5,558 | $ 6,598 |
| Issued during the year | 2,250 | – |
| Redeemed during the year | (1,500) | (1,040) |
| Balance at End of Year | 6,308 | 5,558 |
| **Common Shares** (Note 16) | | |
| Balance at beginning of year | 13,599 | 13,430 |
| Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan | 999 | – |
| Issued under the Stock Option Plan | 57 | 122 |
| Treasury shares sold/purchased | (17) | 47 |
| Issued to finance a portion of the announced acquisition (Notes 10 and 16) | 3,106 | – |
| Balance at End of Year | 17,744 | 13,599 |
| **Contributed Surplus** | | |
| Balance at beginning of year | 313 | 302 |
| Stock option expense, net of options exercised (Note 20) | 3 | 10 |
| Other | 1 | 1 |
| Balance at End of Year | 317 | 313 |
| **Retained Earnings** | | |
| Balance at beginning of year | 35,497 | 30,745 |
| Net income | 13,537 | 7,754 |
| Dividends on preferred shares and distributions payable on other equity instruments (Note 16) | (231) | (244) |
| Dividends on common shares (Note 16) | (3,634) | (2,746) |
| Equity issue expense and premium paid on redemption of preferred shares | (52) | (6) |
| Net discount on sale of treasury shares | – | (6) |
| Balance at End of Year | 45,117 | 35,497 |
| **Accumulated Other Comprehensive Income (Loss) on Fair Value through OCI Securities, net of taxes** (Note 22) | | |
| Balance at beginning of year | 171 | 355 |
| Unrealized (losses) on fair value through OCI debt securities arising during the year | (520) | (161) |
| Unrealized gains on fair value through OCI equity securities arising during the year | 1 | 20 |
| Reclassification to earnings of (gains) during the year | (11) | (43) |
| Balance at End of Year | (359) | 171 |
| **Accumulated Other Comprehensive Income (Loss) on Cash Flow Hedges, net of taxes** (Note 22) | | |
| Balance at beginning of year | 185 | 1,979 |
| (Losses) on derivatives designated as cash flow hedges arising during the year (Note 8) | (4,999) | (1,380) |
| Reclassification to earnings of (gains) on derivatives designated as cash flow hedges during the year | (315) | (414) |
| Balance at End of Year | (5,129) | 185 |
| **Accumulated Other Comprehensive Income on Translation of Net Foreign Operations, net of taxes** (Note 22) | | |
| Balance at beginning of year | 2,269 | 3,980 |
| Unrealized gains (losses) on translation of net foreign operations | 3,202 | (2,207) |
| Unrealized gains (losses) on hedges of net foreign operations | (332) | 496 |
| Reclassification to earnings of net losses related to divestitures (Note 10) | 29 | – |
| Balance at End of Year | 5,168 | 2,269 |
| **Accumulated Other Comprehensive Income (Loss) on Pension and Other Employee Future Benefit Plans, net of taxes** (Note 21) | | |
| Balance at beginning of year | 285 | (638) |
| Gains on remeasurement of pension and other employee future benefit plans (Note 21) | 659 | 923 |
| Balance at End of Year | 944 | 285 |
| **Accumulated Other Comprehensive Income (Loss) on Own Credit Risk on Financial Liabilities Designated at Fair Value, net of taxes** (Note 22) | | |
| Balance at beginning of year | (354) | (158) |
| Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value | 1,282 | (196) |
| Balance at End of Year | 928 | (354) |
| **Total Accumulated Other Comprehensive Income** | 1,552 | 2,556 |
| **Total Equity** | $ 71,038 | $ 57,523 |

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Financial Statements

# Consolidated Statement of Cash Flows

| For the Year Ended October 31 (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| **Cash Flows from Operating Activities** | | |
| Net Income | **$ 13,537** | $ 7,754 |
| Adjustments to determine net cash flows provided by (used in) operating activities: | | |
| Securities (gains), other than trading (Note 3) | **(281)** | (591) |
| Depreciation of premises and equipment (Note 9) | **780** | 791 |
| Depreciation of other assets | **96** | 140 |
| Amortization of intangible assets (Note 11) | **604** | 634 |
| Write-down of goodwill (Notes 10 and 11) | **–** | 779 |
| Provision for credit losses (Note 4) | **313** | 20 |
| Deferred taxes (Note 22) | **475** | 184 |
| Net loss on divestitures (Note 10) | **29** | – |
| Changes in operating assets and liabilities: | | |
| Net (increase) decrease in trading securities | **1,698** | (10,447) |
| Change in derivative instruments – (Increase) decrease in derivative asset | **(13,376)** | 542 |
| – Increase in derivative liability | **27,800** | 529 |
| Net (increase) decrease in current tax asset | **328** | (539) |
| Net increase in current tax liability | **156** | 143 |
| Change in accrued interest – (Increase) decrease in interest receivable | **(1,170)** | 75 |
| – Increase (decrease) in interest payable | **1,312** | (366) |
| Changes in other items and accruals, net | **(6,222)** | 751 |
| Net increase in deposits | **45,232** | 52,244 |
| Net (increase) in loans | **(74,748)** | (23,748) |
| Net increase in securities sold but not yet purchased | **7,515** | 3,545 |
| Net increase in securities lent or sold under repurchase agreements | **810** | 12,866 |
| Net (increase) in securities borrowed or purchased under resale agreements | **(954)** | (289) |
| Net increase (decrease) in securitization and structured entities' liabilities | **1,023** | (968) |
| Net Cash Provided by Operating Activities | **4,957** | 44,049 |
| **Cash Flows from Financing Activities** | | |
| Net increase in liabilities of subsidiaries | **6,927** | – |
| Proceeds from issuance of covered bonds (Note 13) | **12,443** | 4,396 |
| Redemption/buyback of covered bonds (Note 13) | **(5,829)** | (4,074) |
| Proceeds from issuance of subordinated debt (Note 15) | **2,337** | 1,000 |
| Repayment of subordinated debt (Note 15) | **(850)** | (2,250) |
| Proceeds from issuance of preferred shares and other equity instruments, net of issuance costs (Note 16) | **2,245** | – |
| Redemption of preferred shares (Note 16) | **(1,500)** | (1,046) |
| Net proceeds from issuance of common shares (Note 16) | **3,113** | 112 |
| Net proceeds from the sale (purchase) of treasury shares (Note 16) | **(17)** | 47 |
| Cash dividends and distributions paid | **(2,595)** | (2,980) |
| Repayment of lease liabilities | **(294)** | (327) |
| Net Cash Provided by (Used in) Financing Activities | **15,980** | (5,122) |
| **Cash Flows from Investing Activities** | | |
| Net decrease in interest bearing deposits with banks | **3,316** | 144 |
| Purchases of securities, other than trading | **(96,598)** | (49,620) |
| Maturities of securities, other than trading | **21,204** | 27,377 |
| Proceeds from sales of securities, other than trading | **42,829** | 22,720 |
| Premises and equipment – net (purchases) (Note 9) | **(777)** | (484) |
| Purchased and developed software – net (purchases) (Note 11) | **(671)** | (499) |
| Net proceeds from divestitures (Note 10) | **1,226** | 63 |
| Net Cash (Used in) Investing Activities | **(29,471)** | (299) |
| Effect of Exchange Rate Changes on Cash and Cash Equivalents | **2,739** | (2,775) |
| Net increase (decrease) in Cash and Cash Equivalents | **(5,795)** | 35,853 |
| Cash and Cash Equivalents at Beginning of Year | **93,261** | 57,408 |
| **Cash and Cash Equivalents at End of Year** (Note 2) | **$ 87,466** | $ 93,261 |
| **Supplemental Disclosure of Cash Flow Information** | | |
| Net cash provided by operating activities includes: | | |
| Interest paid in the year (1) | **$ 9,557** | $ 5,864 |
| Income taxes paid in the year | **$ 2,374** | $ 2,167 |
| Interest received in the year | **$ 24,046** | $ 18,323 |
| Dividends received in the year | **$ 1,823** | $ 1,732 |

(1) Includes dividends paid on securities sold but not yet purchased.

The accompanying notes are an integral part of these consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.

# Note 1: Basis of Presentation

Bank of Montreal (the bank or BMO) is a chartered bank under the *Bank Act (Canada)* and is a public company incorporated in Canada. We are a highly diversified financial services company, providing a broad range of personal and commercial banking, wealth management and investment banking products and services. The bank's head office is at 129 rue Saint-Jacques, Montreal, Quebec. Our executive offices are at 100 King Street West, 1 First Canadian Place, Toronto, Ontario. Our common shares are listed on the Toronto Stock Exchange (TSX) and the New York Stock Exchange.

We have prepared these consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). We also comply with interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions of Canada (OSFI).

Our consolidated financial statements have been prepared on a historic cost basis, except for the revaluation of the following items: assets and liabilities held for trading; financial assets and liabilities measured or designated at fair value through profit or loss (FVTPL); financial assets measured or designated at fair value through other comprehensive income (FVOCI); financial assets and financial liabilities designated as hedged items in qualifying fair value hedge relationships; cash-settled share-based payment liabilities; defined benefit pension and other employee future benefit liabilities; and insurance-related liabilities.

These consolidated financial statements were authorized for issue by the Board of Directors on December 1, 2022.

## Basis of Consolidation

These consolidated financial statements are inclusive of the financial statements of our subsidiaries as at October 31, 2022. We conduct business through a variety of corporate structures, including subsidiaries, structured entities (SEs), associates and joint ventures. Subsidiaries are those entities where we exercise control through our ownership of the majority of the voting shares. We also hold interests in SEs, which we consolidate when we control the SEs. These are more fully described in Note 7. All of the assets, liabilities, revenues and expenses of our subsidiaries and consolidated SEs are included in our consolidated financial statements. All intercompany transactions and balances are eliminated on consolidation.

We hold investments in associates, where we exert significant influence over operating and financing decisions (generally companies in which we own between 20% and 50% of the voting shares). These are accounted for using the equity method. The equity method is also applied to our investments in joint ventures, which are entities where we exercise joint control through an agreement with other shareholders. Under the equity method of accounting, investments are initially recorded at cost, and the carrying amount is increased or decreased to recognize our share of investee's net income or loss, including other comprehensive income or loss. Additional information regarding accounting for investments in associates and joint ventures is included in Note 3.

## Significant Accounting Policies

To facilitate a better understanding of our consolidated financial statements, we have disclosed our significant accounting policies throughout the following notes with the related financial disclosures by major caption:



## Translation of Foreign Currencies

We conduct business in a variety of foreign currencies and present our consolidated financial statements in Canadian dollars, which is our functional currency. Monetary assets and liabilities, as well as non-monetary assets and liabilities measured at fair value that are denominated in foreign currencies, are translated into Canadian dollars at the exchange rate in effect at the balance sheet date. Non-monetary assets and liabilities not measured at fair value are translated into Canadian dollars at historical rates. Revenues and expenses denominated in foreign currencies are translated using the average exchange rate for the year.

Unrealized gains and losses arising from translating our net investment in foreign operations into Canadian dollars, net of related hedging activities and applicable income taxes, are included in our Consolidated Statement of Comprehensive Income within net gains (losses) on translation of net foreign operations. When we dispose of a foreign operation such that control, significant influence or joint control is lost, the cumulative amount of the translation gain (loss) and any applicable hedging activities and related income taxes is reclassified to our Consolidated Statement of Income as part of the gain or loss on disposition.

Foreign currency translation gains and losses on equity securities measured at FVOCI that are denominated in foreign currencies are included in accumulated other comprehensive income on FVOCI equity securities, net of taxes, in our Consolidated Statement of Changes in Equity. All other foreign currency translation gains and losses are included in foreign exchange gains, other than trading, in our Consolidated Statement of Income as they arise.

From time to time, we enter into foreign exchange hedge contracts to reduce our exposure to changes in the value of foreign currencies. Realized and unrealized gains and losses that arise on the mark-to-market of foreign exchange contracts related to economic hedges are included in non-interest revenue in our Consolidated Statement of Income. Changes in the fair value of derivative contracts that qualify as accounting hedges are recorded in our Consolidated Statement of Comprehensive Income within net change in unrealized gains (losses) on derivatives designated as cash flow hedges, with the spot/forward differential (the difference between the foreign currency exchange rate at the inception of the contract and the rate at the end of the contract) recorded in interest income (expense) over the term of the hedge.

## Revenue

*Dividend Income*

Dividend income is recognized when the right to receive payment is established. This is the ex-dividend date for listed equity securities.

*Fee Income*

**Securities commissions and fees** are earned in BMO Wealth Management and BMO Capital Markets on brokerage transactions executed for customers, generally as a fixed fee per share traded, and the commissions and related clearing expense are recognized on trade date. There are also fees based on a percentage of the customer's portfolio holdings that entitle clients to investment advice and a certain number of trades, which are recorded over the period to which the fees relate.

**Deposit and payment service charges** are primarily earned in Personal and Commercial Banking and include monthly account maintenance fees and other activity-based fees earned on deposit and cash management services. Fees are recognized over time when account maintenance and cash management services are provided, or at a point in time when an income-generating activity is performed.

**Card fees** arise in Personal and Commercial Banking and primarily include interchange income, late fees and annual fees. Card fees are recorded when the related services are provided, except for annual fees, which are recorded evenly throughout the year. Interchange income is calculated as a percentage of the transaction amount and/or a fixed price per transaction, as established by the payment network, and is recognized when the card transaction is settled. Reward costs for our cards are recorded as a reduction in card fees.

**Investment management and custodial fees** are earned in BMO Wealth Management and are based primarily on the balance of assets under management or assets under administration, as at the period end, for investment management, custodial, estate and trustee services provided. Fees are recorded over the period the services are performed.

**Mutual fund revenues** arise in BMO Wealth Management and are earned on fund management services which are primarily calculated and recorded based on a percentage of the fund's net asset value. The Fees are recorded over the period the services are performed.

**Underwriting and advisory fees** are earned in BMO Capital Markets and arise from securities offerings in which we act as an underwriter or agent, structuring and administering loan syndications, and fees earned from providing merger-and-acquisition services and structuring advice. Underwriting and advisory fees are generally recognized when the services are completed.

## Leases

We are lessors in both financing leases and operating leases. Leases are classified as financing leases if they transfer substantially all the risks and rewards incidental to ownership of the leased asset to the lessee. Otherwise they are classified as operating leases, as we retain substantially all the risks and rewards of asset ownership.

As lessor in a financing lease, a loan is recognized equal to the investment in the lease, which is calculated as the present value of the minimum payments to be received from the lessee, discounted at the interest rate implicit in the lease, plus any unguaranteed residual value we expect to recover at the end of the lease. Finance lease income is recognized in interest, dividend and fee income, loans, in our Consolidated Statement of Income.

Assets under operating leases are recorded in other assets in our Consolidated Balance Sheet. Rental income is recognized on a straight-line basis over the term of the lease in non-interest revenue, other, in our Consolidated Statement of Income. Depreciation on these assets is recognized on a straight-line basis over the life of the lease in non-interest expense, other, in our Consolidated Statement of Income.

Refer to Note 9 for our policy on lessee accounting.

## Assets Held-for-Sale

Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value less costs to sell and are presented within other assets in our Consolidated Balance Sheet. Subsequent to its initial classification, a non-current asset is no longer depreciated or amortized, and any subsequent write-down in fair value less costs to sell is recognized in non-interest revenue, other, in our Consolidated Statement of Income.

## Changes in Accounting Policies

*Interbank Offered Rate (IBOR) Reform – Phase 2 Amendments*

Effective November 1, 2020, we early adopted the IASB's IBOR Phase 2 amendments to IFRS 9 *Financial Instruments* (IFRS 9), IAS 39 *Financial Instruments: Recognition and Measurement* (IAS 39), IFRS 7 *Financial Instruments: Disclosures* (IFRS 7) and IFRS 4 *Insurance Contracts* (IFRS 4), as well as IFRS 16 *Leases*. These amendments address issues that arise from implementation of IBOR reform, where IBORs will be replaced with alternative benchmark rates.

For financial instruments at amortized cost, the amendments introduce a practical expedient such that if a change in the contractual cash flows is as a direct consequence of IBOR reform and occurs on an economically equivalent basis, the change will be accounted for by updating the effective interest rate with no immediate gain or loss recognized. The amendments also provide additional temporary relief from applying specific IAS 39 hedge accounting requirements to hedging relationships affected by IBOR reform. For example, there is an exemption from the requirement to discontinue hedge accounting when changes to hedge documentation are solely the result of IBOR reform.

With the cessation dates for London Interbank Offered Rate (LIBOR) determined and the transition from IBORs to alternative reference rates (ARRs) well underway, and as both a holder and an issuer of IBOR-based instruments, BMO continues to be exposed to financial, operational, legal and regulatory, and reputational risks. These risks arise principally from amending legacy contracts from LIBOR to an ARR or existing fallback clauses for new ARRs and the resulting impact on economic risk management, as well as updating hedge designations as the new ARRs emerge. Our enterprise IBOR Transition Office (ITO) continues to coordinate and oversee the transition from IBORs to ARRs, with a focus on managing and mitigating internal risks, as well as managing our client relationships. The ITO, sponsored and supported by senior management has a global mandate, including to address the bank's industry and regulatory engagement, internal and external communications, technology and operations modifications, introduction of new products, migration of existing client contracts, program strategy and governance, and to evaluate financial reporting impacts, including impacts on hedge accounting. As the market continues to develop, we have added and will continue to add ARR-based products to our suite of offerings.

We adhered to the International Swaps and Derivatives Association Fallbacks Protocol (ISDA Protocol), which took effect on January 25, 2021. The ISDA Protocol provides specific fallbacks depending on whether the relevant IBOR (for example, USD LIBOR) has been permanently discontinued or is temporarily unavailable. We continue to incorporate contractual fallback provisions in new IBOR-based cash products in order to ensure there is an alternative benchmark rate at the time of the relevant IBOR cessation.

On March 5, 2021, the Financial Conduct Authority (FCA) confirmed that LIBOR settings will cease to be provided by any administrator immediately after December 31, 2021 for all Sterling, Euro, Swiss Franc and Japanese Yen settings as well as the 1-week and 2-month USD LIBOR settings. The remaining USD LIBOR settings will cease to be provided immediately after June 30, 2023. U.S. prudential regulators have issued supervisory guidance that the extension of these certain USD LIBOR settings to June 30, 2023 applies only to legacy contracts; new issuances of LIBOR-based instruments must cease by December 31, 2021. The ITO adjusted all impacted project plans to align with these timelines.

As planned, BMO transitioned all exposure to Sterling, Euro, Swiss Franc and Japanese Yen LIBOR, as well as the 1-week and 2-month USD LIBOR to ARRs, in advance of the December 31, 2021 discontinuation of such settings.

In addition, BMO ceased issuing new USD LIBOR-based loans and financial instruments after December 31, 2021, except in permitted circumstances, in compliance with U.S. prudential regulator supervisory guidance. As we approach the June 30, 2023 cessation date for the remaining USD LIBOR settings, overall USD LIBOR exposures are being reduced and existing USD LIBOR derivative exposures are expected to largely transition when central counterparties convert existing LIBOR trades to Secured Overnight Financing Rate by the cessation date.

On December 16, 2021, the Canadian Alternative Reference Rate working group (CARR) recommended the administrator, Refinitiv Benchmark Services UK Limited (RBSL), to cease publication of Canadian Dollar Offered Rate (CDOR) settings immediately after June 28, 2024, using a two-stage transition approach. By the end of the first stage on June 30, 2023, CARR expects that all new derivative contracts and securities will use the Canadian Overnight Repo Rate Average (CORRA), with the exception of derivatives that hedge or reduce CDOR exposures from derivatives or securities transacted before June 30, 2023, or loan agreements entered into before June 28, 2024. All remaining CDOR exposures should be transitioned to CORRA by June 28, 2024, marking the end of the second stage. On May 16, 2022, following public consultation, RBSL announced that all remaining CDOR settings will cease publication immediately after June 28, 2024, in line with CARR recommendations. The ITO adjusted all affected project plans as a result of the RBSL announcement.

The following table presents quantitative information for financial instruments that referenced certain IBORs as at October 31, 2021, which were either due to mature after June 30, 2023 for USD LIBOR settings other than 1-week and 2-month US LIBOR, or after December 31, 2021 for all other in-scope IBORs, or are demand facilities with no maturity date. The quantitative information for October 31, 2022 includes financial instruments that referenced remaining USD LIBOR settings due to mature after June 30, 2023, or after June 28, 2024 for remaining CDOR and bankers' acceptance (BA) rate settings, or are demand facilities that will be subject to remediation to amend the benchmark interest rate. Changes in our exposure during fiscal 2022 did not result in significant changes to the risks arising from transition since adoption of these Phase 2 amendments. In the normal course of business, our exposures may continue to fluctuate with no significant impact expected on our IBOR conversion plans.

| (Canadian $ in millions) | | **2022** | | | 2021 |
|---|---|---|---|---|---|
| | **USD LIBOR** | **CDOR** | USD LIBOR | GBP LIBOR | Other (1) |
| Non-derivative assets (2) | **48,162** | **37,101** | 91,991 | 730 | 884 |
| Non-derivative liabilities (2) | **3,335** | **4,583** | 3,043 | 678 | – |
| Derivative notional amounts (3)(4) | **1,870,472** | **1,554,518** | 1,340,121 | 28,385 | 4,898 |
| Authorized and committed loan commitments (5)(6)(7) | **90,797** | **26,106** | 62,174 | 241 | 15,047 |

(1) Includes CHF LIBOR, EONIA and JPY LIBOR, which have been discontinued after December 31, 2021.
(2) All amounts are presented based on contractual amounts outstanding with the exception of securities, recorded in non-derivative assets, which are presented based on carrying value.
(3) Notional amounts represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.
(4) Includes certain cross-currency swap positions where both the pay and receive legs currently reference an IBOR. For those derivatives, the table above includes the notional amounts for both the pay and receive legs in the relevant columns aligning with the IBOR exposure.
(5) Excludes personal lines of credit and credit cards that are unconditionally cancellable at our discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.
(6) Other includes loan commitments where our customers have the option to draw from their facility in multiple currencies. Amounts drawn will be subject to prevailing IBORs for the foreign currency, including those that are in scope of IBOR reform.
(7) Commitments also include backstop liquidity facilities provided by the bank to external parties.

*Conceptual Framework*
Effective November 1, 2020, we adopted the revised Conceptual Framework (Framework), which sets out the fundamental concepts for financial reporting to ensure consistency in standard-setting decisions and that similar transactions are treated in a similar way, so as to provide useful information to users of financial statements. The revised Framework had no impact on our accounting policies.

## Use of Estimates and Judgments

The preparation of the consolidated financial statements requires management to use estimates and assumptions that affect the carrying amounts of certain assets and liabilities, certain amounts reported in net income and other related disclosures.

The most significant assets and liabilities for which we must make estimates and judgments include the allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred tax assets; goodwill and intangible assets; insurance-related liabilities; provisions, including legal proceedings and restructuring charges; transfers of financial assets and consolidation of structured entities. We make judgments in assessing the business model for financial assets as well as whether substantially all risks and rewards have been transferred in respect of transfers of financial assets and whether we control SEs, as discussed in Notes 6 and 7, respectively. If actual results were to differ from the estimates, the impact would be recorded in future periods.

The economic outlook for Canada and the U.S. is subject to several risks that could lead to a severe downturn, including, persistent high inflation and significant further increases in interest rates, an escalation of the conflict in Ukraine, rising geopolitical tensions between the U.S. and China, and the pandemic. A significant housing market correction could also occur if monetary policy becomes overly restrictive to control inflation. The impact on BMO's business, results of operations, reputation, financial performance and condition, including the potential for credit, counterparty and mark-to-market losses, its credit ratings and regulatory capital and liquidity ratios, as well as impacts to its customers and competitors, will depend on future developments, which remain uncertain. By their very nature, the judgments and estimates we make for the purposes of preparing our consolidated financial statements relate to matters that are inherently uncertain. However, we have detailed policies and internal controls that are intended to ensure the judgments made in estimating these amounts are well controlled and independently reviewed, and that our policies are consistently applied from period to period. We believe that our estimates of the value of our assets and liabilities are appropriate as at October 31, 2022.

*Allowance for Credit Losses*
The expected credit loss (ECL) model requires the recognition of credit losses generally based on 12 months of expected losses for performing loans and the recognition of lifetime losses on performing loans that have experienced a significant increase in credit risk since origination.

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The bank's methodology for determining significant increase in credit risk is based on the change in probability of default (PD) between origination and reporting date, assessed using probability-weighted scenarios as well as certain other criteria, such as 30-day past due and watchlist status. The assessment of a significant increase in credit risk requires experienced credit judgment.

In determining whether there has been a significant increase in credit risk and in calculating the amount of expected credit losses, we must rely on estimates and exercise judgment regarding matters for which the ultimate outcome is unknown. These judgments include changes in circumstances that may cause future assessments of credit risk to be materially different from current assessments, which could require an increase or decrease in the allowance for credit losses. The calculation of expected credit losses includes the explicit incorporation of forecasts of future economic conditions. We have developed models incorporating specific macroeconomic variables that are relevant to each portfolio. Key economic variables for our retail portfolios include primary operating markets of Canada, the United States (U.S.) and regional markets where considered significant. Forecasts are developed internally by our Economics group, considering external data and our view of future economic conditions. We exercise experienced credit judgment to incorporate multiple economic forecasts which are probability-weighted in the determination of the final expected credit loss. The allowance is sensitive to changes in both economic forecasts and the probability weight assigned to each forecast scenario.

Additional information regarding the allowance for credit losses is included in Note 4.

*Financial Instruments Measured at Fair Value*
Fair value measurement techniques are used to value various financial assets and financial liabilities, and are also used in performing impairment testing on certain non-financial assets.

Additional information regarding our fair value measurement techniques is included in Note 17.

*Pension and Other Employee Future Benefits*
Our pension and other employee future benefit expense is calculated by our independent actuaries using assumptions determined by management. If actual experience were to differ from the assumptions used, we would recognize this difference in other comprehensive income.

Pension and other employee future benefit expense, plan assets and defined benefit obligations are also sensitive to changes in discount rates. We determine discount rates for all of our plans using high-quality AA rated corporate bond yields with terms matching the plans' specific cash flows.

Additional information regarding our accounting for pension and other employee future benefits is included in Note 21.

*Impairment of Securities*
We review investments in associates and joint ventures at each quarter-end reporting period to identify and evaluate investments that show indications of possible impairment. For these equity securities, a significant or prolonged decline in the fair value of a security below its cost is objective evidence of impairment.

Debt securities measured at amortized cost or FVOCI are assessed for impairment using the expected credit loss model. For securities determined to have low credit risk, the allowance for credit losses is measured at a 12-month expected credit loss.

Additional information regarding our accounting for debt securities measured at amortized cost or FVOCI and investments in associates and joint ventures, allowance for credit losses and the determination of fair value is included in Notes 3 and 17.

*Income Taxes and Deferred Tax Assets*

The provision for income taxes is calculated based on the expected tax treatment of transactions recorded in either our Consolidated Statement of Income or Consolidated Statement of Changes in Equity. In determining the provision for income taxes, we interpret tax legislation, case law and administrative positions in numerous jurisdictions and, based on our judgment, record our estimate of the amount required to settle tax obligations. We also make assumptions about the expected timing of the reversal of deferred tax assets and liabilities. If our interpretations and assumptions differ from those of tax authorities or if the timing of reversals is not as expected, our provision for income taxes could increase or decrease in future periods. The amount of any such increase or decrease cannot be reasonably estimated.

Deferred tax assets are recognized only when it is probable that sufficient taxable profit will be available in future periods against which deductible temporary differences or unused tax losses and tax credits may be utilized. We are required to assess whether it is probable that our deferred tax assets will be realized. The factors used to assess the probability of realization are our past experience of income and capital gains, our forecast of future net income before taxes, and the remaining expiration period of tax loss carryforwards and tax credits. Changes in our assessment of these factors could increase or decrease our provision for income taxes in future periods.

Additional information regarding our accounting for income taxes is included in Note 22.

*Goodwill and Intangible Assets*

For the purpose of impairment testing, goodwill is allocated to our groups of cash-generating units (CGUs), which represent the lowest level within the bank at which goodwill is monitored for internal management purposes. Impairment testing is performed at least annually, by comparing the carrying values and the recoverable amounts of the CGUs to which goodwill has been allocated to determine whether the recoverable amount of each group is greater than its carrying value. If the carrying value of the group were to exceed its recoverable amount, an impairment calculation would be performed. The recoverable amount of a CGU is the higher of its fair value less costs to sell and value in use.

In determining fair value less costs to sell, we employ a discounted cash flow model consistent with those used when we acquire businesses. This model is dependent on assumptions related to revenue growth, discount rates, synergies achieved on acquisition and the availability of comparable acquisition data. Changes in any of these assumptions would affect the determination of fair value for each of the business units in a different manner. Management must exercise judgment and make assumptions in determining fair value less costs to sell, and differences in judgment and assumptions could affect the determination of fair value and any resulting impairment write-down.

Intangible assets with a definite life are amortized to income on either a straight-line or an accelerated basis over a period not exceeding 15 years, depending on the nature of the asset. We test definite-life intangible assets for impairment when circumstances indicate the carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

Additional information regarding goodwill and intangible assets is included in Note 11.

*Insurance-Related Liabilities*

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions. The most significant impact on the valuation of a liability would result from a change in the assumption for future investment yields.

Additional information regarding insurance-related liabilities is included in Note 14.

*Provisions*

A provision, including for legal proceedings and restructuring charges, is recognized if, as a result of a past event, the bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are recorded at the best estimate of the amounts required to settle the obligation as at the balance sheet date, taking into account the risks and uncertainties associated with the obligation. Management and external experts are involved in estimating any provision, as necessary. The actual costs of settling some obligations may be substantially higher or lower than the amounts of the provisions.

Additional information regarding provisions is included in Note 24.

*Transfer of Assets*

We enter into transactions in which we transfer assets, typically mortgage loans, mortgage-backed securities and credit card loans, to a structured entity or third party to obtain alternate sources of funding or as part of our trading activities. We assess whether substantially all of the risks and rewards of or control over the assets have been transferred to determine if they qualify for derecognition. Where we continue to be exposed to substantially all of the repayment, interest rate and/or credit risk associated with the securitized assets, they do not qualify for derecognition. We continue to recognize the assets and the related cash proceeds as secured financings in our Consolidated Balance Sheet.

Transferred assets are discussed in greater detail in Note 6.

*Consolidation of Structured Entities*

For securitization vehicles sponsored by the bank, the vehicles typically have limited decision-making authority. The structure of these vehicles limits the activities they can undertake, the types of assets they can hold and the funding of their activities. We control and consolidate these vehicles when we have the key decision-making powers necessary to obtain the majority of the benefits from their activities.

For certain investments in limited partnerships, we exercise judgment in determining whether we control an entity. Based on an assessment of our interests and rights, we have determined that we do not control certain entities, even though we may have an ownership interest greater than 50%. This may be the case when we are not the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity. Additionally, we have determined that we control certain entities despite having an ownership interest of less than 50%. This may be the case when we are the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity.

Structured entities are discussed in greater detail in Notes 7 and 20.

## Future Changes in IFRS

*Insurance Contracts*

In May 2017, the IASB issued IFRS 17 *Insurance Contracts* (IFRS 17), which provides a comprehensive approach to accounting for all types of insurance contracts and will replace the existing IFRS 4 *Insurance Contracts* (IFRS 4). The standard was subsequently amended in June 2020 with additional narrow-scope amendments in December 2021. IFRS 17 will be effective for our fiscal year beginning November 1, 2023. We established an enterprise-wide project in order to meet the requirements of IFRS 17, and we continue to evaluate the potential impacts of adoption, including available accounting policy and transition choices.

IFRS 17 will change the fundamental principles used to recognize and measure insurance contracts, including life insurance contracts, reinsurance contracts and investment contracts with discretionary participation features.

Key differences from IFRS 4 are as follows:

IFRS 17 requires us to measure groups of contracts based on our estimates of the present value of future cash flows that are expected to arise as we fulfill the contracts, an explicit risk adjustment for non-financial risk and a contractual service margin (CSM) which represents unearned profits. The CSM component of the insurance contract liability will be amortized into income as services/insurance coverage is provided and groups of contracts that result in losses are recorded in income immediately. Under IFRS 4, there is no similar grouping requirement and gains/losses on new business are recognized in income immediately. When we adopt IFRS 17, we will establish the CSM for insurance contracts in effect which will increase liabilities and decrease equity.

The discount rate we use under IFRS 4 is connected to the assets held to support insurance contract liabilities. Under IFRS 17, the discount rate will reflect the characteristics of the insurance contract liabilities. We have an accounting policy choice under IFRS 17 to recognize changes in the discount rate on insurance contract liabilities, either through other comprehensive income or in our statement of income.

On transition, we will either apply a full retrospective approach where we restate prior periods as if we had always applied IFRS 17, a modified retrospective approach where we apply specific modifications to the full retrospective application, or a full fair value method where we measure the contracts at fair value to determine a value for the CSM.

# Note 2: Cash and Interest Bearing Deposits with Banks

## Cash and Cash Equivalents

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| Cash and deposits with banks (1) | **85,234** | 91,377 |
| Cheques and other items in transit, net | **2,232** | 1,884 |
| Total cash and cash equivalents | **87,466** | 93,261 |

(1) Includes deposits with the Bank of Canada, the U.S. Federal Reserve and other central banks.

*Cheques and Other Items in Transit, Net*
Cheques and other items in transit are recorded at cost and represent the net position of the uncleared cheques and other items in transit between us and other banks.

*Cash Restrictions*
Certain of our foreign operations are required to maintain reserves or minimum balances with central banks in their respective countries of operation, totalling $87 million as at October 31, 2022 ($110 million as at October 31, 2021).

## Interest Bearing Deposits with Banks

Deposits with banks are recorded at amortized cost and include acceptances we have purchased that were issued by other banks. Interest income earned on these deposits is recorded on an accrual basis.

# Note 3: Securities

Securities are divided into six types, each with a different purpose and accounting treatment. The types of securities we hold are as follows:

**Trading securities** are securities purchased for resale over a short period of time. Trading securities are recorded at fair value through profit or loss (FVTPL). Transaction costs and changes in fair value are recorded in our Consolidated Statement of Income in trading revenues.

**Fair value through profit or loss securities** are measured at fair value, with changes in fair value and related transaction costs recorded in our Consolidated Statement of Income in securities gains, other than trading, except as noted below. This category includes the following:

*Securities Designated at FVTPL*
In order to qualify for this designation, the security must have a reliably measurable fair value, and the designation eliminates or significantly reduces the inconsistent treatment that would otherwise arise from measuring the gains and losses on a different basis. Securities must be designated on initial recognition, and the designation is irrevocable. If these securities were not designated at FVTPL, they would be accounted for at either FVOCI or amortized cost.

We designate certain securities held by our insurance subsidiaries that support our insurance liabilities at FVTPL, since the actuarial calculation of insurance liabilities is based on the fair value of the investments supporting them. This designation aligns the accounting result with the way the portfolio is managed on a fair value basis. The change in fair value of the securities is recorded in non-interest revenue, insurance revenue, and the change in fair value of the liabilities is recorded in insurance claims, commissions and changes in policy benefit liabilities. The fair value of these investments of $9,231 million as at October 31, 2022 ($11,172 million as at October 31, 2021) is recorded in securities in our Consolidated Balance Sheet. The impact of recording these investments at fair value through profit or loss was a decrease of $1,954 million in non-interest revenue, insurance revenue, for the year ended October 31, 2022 (a decrease of $202 million in 2021).

*Securities Mandatorily Measured at FVTPL*
Securities managed on a fair value basis, but not held for trading, or debt securities with cash flows that do not represent solely payments of principal and interest and equity securities not held for trading or designated at FVOCI, are classified as FVTPL. The fair value of these investments of $4,410 million as at October 31, 2022 ($3,038 million as at October 31, 2021) is recorded in securities in our Consolidated Balance Sheet.

**Debt securities at FVOCI** are debt securities purchased with the objective of both collecting contractual cash flows and selling the securities. The securities' cash flows represent solely payments of principal and interest. These securities may be sold in response to, or in anticipation of, changes in interest rates and any resulting prepayment risk, changes in credit risk, changes in foreign currency risk or changes in funding sources or terms, or in order to meet liquidity needs.

Debt securities measured at FVOCI are initially recorded at fair value plus transaction costs. They are subsequently measured at fair value, with unrealized gains and losses recorded in our Consolidated Statement of Comprehensive Income until the security is sold or impaired. Gains and losses on disposal and impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned is recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities, using the effective interest method.

**Equity securities at FVOCI** are equity securities for which we have elected to record changes in the fair value of the instrument in other comprehensive income as opposed to fair value through profit or loss. Gains or losses recorded on these instruments will never be recognized in profit or loss. Equity securities measured at FVOCI are not subject to an impairment assessment.

**Debt securities at amortized cost** are debt securities purchased with the objective of collecting contractual cash flows, and those cash flows represent solely payments of principal and interest. These securities are initially recorded at fair value plus transaction costs and are subsequently measured at amortized cost using the effective interest method. Impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned and amortization of premiums, discounts and transaction costs are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

**Investments in associates and joint ventures** are accounted for using the equity method of accounting. Investments in associates are those in which we exert significant influence over operating and financing decisions; generally companies in which we own between 20% and 50% of the voting shares. Investments in joint ventures are where we have joint control. Our share of the net income or loss, including any impairment losses, is recorded in non-interest revenue, share of profit (loss) in associates and joint ventures in our Consolidated Statement of Income. Any other comprehensive income amounts are reflected in the relevant sections of our Consolidated Statement of Comprehensive Income.

We account for all of our securities transactions using settlement date accounting in our Consolidated Balance Sheet.

## Impairment Review

Debt securities at amortized cost or FVOCI are assessed for impairment using the ECL model, with the exception of those determined to have low credit risk, where the allowance for credit losses is measured at a 12-month expected credit loss. A debt security is considered to have low credit risk if it has a low risk of default, the borrower has a strong capacity to meet its contractual cash flow obligations in the near term and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfill its contractual cash flow obligations.

Debt securities at amortized cost totalling $106,590 million as at October 31, 2022 ($49,970 million as at October 31, 2021) are net of allowances for credit losses of $3 million as at October 31, 2022 ($2 million as at October 31, 2021).

Debt securities at FVOCI totalling $43,408 million as at October 31, 2022 ($62,991 million as at October 31, 2021) are net of allowances for credit losses of $3 million as at October 31, 2022 ($2 million as at October 31, 2021).

## Fair Value Measurement

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid or ask prices, depending on which is the most appropriate to measure fair value. Where market quotes are not available, we use estimation techniques to determine fair value. Additional information regarding fair value measurement techniques is included in Note 17.

## Remaining Term to Maturity of Securities

The following table shows the remaining term to maturity of securities.

| (Canadian $ in millions, except as noted) | | | Term to maturity | | | | 2022 | 2021 |
|---|---|---|---|---|---|---|---|---|
| | **Within 1 year** | **1 to 3 years** | **3 to 5 years** | **5 to 10 years** | **Over 10 years** | **No maturity** | **Total** | Total |
| **Trading Securities** | | | | | | | | |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | **3,361** | **3,617** | **759** | **1,815** | **1,384** | **–** | **10,936** | 7,596 |
| Canadian provincial and municipal governments | **1,247** | **826** | **390** | **876** | **2,771** | **–** | **6,110** | 5,838 |
| U.S. federal government | **2,269** | **6,034** | **3,051** | **3,572** | **1,773** | **–** | **16,699** | 9,582 |
| U.S. states, municipalities and agencies | **–** | **60** | **42** | **16** | **21** | **–** | **139** | 458 |
| Other governments | **1,337** | **1,432** | **742** | **367** | **92** | **–** | **3,970** | 1,898 |
| NHA MBS, U.S. agency MBS and CMO (1) | **32** | **165** | **432** | **176** | **13,507** | **–** | **14,312** | 14,054 |
| Corporate debt | **2,375** | **1,685** | **2,117** | **2,521** | **894** | **–** | **9,592** | 9,894 |
| Trading loans | **–** | **96** | **49** | **201** | **–** | **–** | **346** | 160 |
| Corporate equity | **–** | **–** | **–** | **–** | **–** | **46,073** | **46,073** | 54,931 |
| Total trading securities | **10,621** | **13,915** | **7,582** | **9,544** | **20,442** | **46,073** | **108,177** | 104,411 |
| **FVTPL Securities** | | | | | | | | |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | **319** | **2** | **9** | **–** | **163** | **–** | **493** | 863 |
| Canadian provincial and municipal governments | **36** | **10** | **8** | **90** | **936** | **–** | **1,080** | 1,380 |
| U.S. federal government | **4** | **–** | **–** | **–** | **–** | **–** | **4** | 38 |
| Other governments | **39** | **48** | **–** | **–** | **–** | **–** | **87** | 92 |
| NHA MBS, U.S. agency MBS and CMO (1) | **–** | **–** | **–** | **8** | **–** | **–** | **8** | 9 |
| Corporate debt | **136** | **152** | **285** | **937** | **4,969** | **–** | **6,479** | 7,704 |
| Corporate equity | **–** | **–** | **–** | **–** | **–** | **5,490** | **5,490** | 4,124 |
| Total FVTPL securities | **534** | **212** | **302** | **1,035** | **6,068** | **5,490** | **13,641** | 14,210 |
| **FVOCI Securities** | | | | | | | | |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | | | | | | | | |
| Amortized cost | **2,235** | **843** | **6,261** | **3,159** | **–** | **–** | **12,498** | 13,087 |
| Fair value | **2,229** | **816** | **6,122** | **3,134** | **–** | **–** | **12,301** | 13,065 |
| Yield (%) | **2.08** | **1.68** | **1.65** | **3.29** | **–** | **–** | **2.14** | 1.48 |
| Canadian provincial and municipal governments | | | | | | | | |
| Amortized cost | **720** | **632** | **1,360** | **1,929** | **83** | **–** | **4,724** | 2,973 |
| Fair value | **714** | **611** | **1,300** | **1,866** | **80** | **–** | **4,571** | 2,987 |
| Yield (%) | **1.22** | **2.51** | **2.74** | **3.21** | **4.29** | **–** | **2.70** | 1.45 |
| U.S. federal government | | | | | | | | |
| Amortized cost | **1,006** | **49** | **751** | **1,249** | **348** | **–** | **3,403** | 21,041 |
| Fair value | **989** | **46** | **680** | **1,067** | **328** | **–** | **3,110** | 21,026 |
| Yield (%) | **2.65** | **1.02** | **1.67** | **1.50** | **4.05** | **–** | **2.13** | 1.48 |
| U.S. states, municipalities and agencies | | | | | | | | |
| Amortized cost | **485** | **1,062** | **602** | **864** | **850** | **–** | **3,863** | 4,034 |
| Fair value | **483** | **1,030** | **567** | **809** | **825** | **–** | **3,714** | 4,114 |
| Yield (%) | **2.26** | **2.16** | **2.31** | **2.37** | **2.44** | **–** | **2.30** | 1.91 |
| Other governments | | | | | | | | |
| Amortized cost | **3,385** | **1,420** | **1,589** | **138** | **–** | **–** | **6,532** | 6,476 |
| Fair value | **3,377** | **1,390** | **1,511** | **133** | **–** | **–** | **6,411** | 6,502 |
| Yield (%) | **0.86** | **1.95** | **2.64** | **5.04** | **–** | **–** | **1.62** | 1.19 |
| NHA MBS (1) | | | | | | | | |
| Amortized cost | **25** | **102** | **1,212** | **–** | **37** | **–** | **1,376** | 1,122 |
| Fair value | **21** | **102** | **1,204** | **–** | **36** | **–** | **1,363** | 1,125 |
| Yield (%) | **0.46** | **0.85** | **2.22** | **–** | **1.53** | **–** | **2.07** | 1.23 |
| U.S. agency MBS and CMO (1) | | | | | | | | |
| Amortized cost | **70** | **44** | **78** | **1,215** | **6,789** | **–** | **8,196** | 10,894 |
| Fair value | **70** | **42** | **72** | **1,181** | **6,540** | **–** | **7,905** | 11,011 |
| Yield (%) | **3.42** | **2.96** | **2.67** | **2.34** | **2.38** | **–** | **2.39** | 1.22 |
| Corporate debt | | | | | | | | |
| Amortized cost | **1,439** | **1,249** | **1,084** | **238** | **193** | **–** | **4,203** | 3,147 |
| Fair value | **1,391** | **1,221** | **1,024** | **206** | **191** | **–** | **4,033** | 3,161 |
| Yield (%) | **0.82** | **3.28** | **2.34** | **4.74** | **3.59** | **–** | **2.29** | 1.37 |
| Corporate equity | | | | | | | | |
| Amortized cost | **–** | **–** | **–** | **–** | **–** | **122** | **122** | 103 |
| Fair value | **–** | **–** | **–** | **–** | **–** | **153** | **153** | 132 |
| Total cost or amortized cost | **9,365** | **5,401** | **12,937** | **8,792** | **8,300** | **122** | **44,917** | 62,877 |
| Total fair value | **9,274** | **5,258** | **12,480** | **8,396** | **8,000** | **153** | **43,561** | 63,123 |
| Yield (%) | **1.45** | **2.30** | **2.04** | **2.86** | **2.50** | **–** | **2.19** | 1.42 |
| **Amortized Cost Securities** | | | | | | | | |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | | | | | | | | |
| Amortized cost | **2,146** | **3,537** | **1,319** | **134** | **–** | **–** | **7,136** | 7,084 |
| Fair value | **2,223** | **3,513** | **1,267** | **126** | **–** | **–** | **7,129** | 7,120 |
| Yield (%) | **0.89** | **1.85** | **1.71** | **2.66** | **–** | **–** | **1.55** | 1.49 |
| Canadian provincial and municipal governments | | | | | | | | |
| Amortized cost | **984** | **2,113** | **1,345** | **1,146** | **–** | **–** | **5,588** | 5,642 |
| Fair value | **1,044** | **2,133** | **1,299** | **1,107** | **–** | **–** | **5,583** | 5,723 |
| Yield (%) | **2.71** | **1.91** | **2.32** | **2.90** | **–** | **–** | **2.35** | 2.07 |
| U.S. federal government | | | | | | | | |
| Amortized cost | **924** | **15,825** | **15,098** | **23,511** | **3,887** | **–** | **59,245** | 5,633 |
| Fair value | **942** | **14,785** | **13,414** | **19,703** | **2,873** | **–** | **51,717** | 5,589 |
| Yield (%) | **0.94** | **1.46** | **1.29** | **1.56** | **2.05** | **–** | **1.49** | 1.51 |
| U.S. states, municipalities and agencies | | | | | | | | |
| Amortized cost | **–** | **–** | **–** | **109** | **–** | **–** | **109** | – |
| Fair value | **–** | **–** | **–** | **105** | **–** | **–** | **105** | – |
| Yield (%) | **–** | **–** | **–** | **4.26** | **–** | **–** | **4.26** | – |
| Other governments | | | | | | | | |
| Amortized cost | **419** | **577** | **376** | **15** | **–** | **–** | **1,387** | 1,413 |
| Fair value | **456** | **544** | **364** | **13** | **–** | **–** | **1,377** | 1,420 |
| Yield (%) | **1.44** | **1.31** | **2.46** | **1.00** | **–** | **–** | **1.66** | 1.24 |
| NHA MBS, U.S. agency MBS and CMO (1) | | | | | | | | |
| Amortized cost | **79** | **1,757** | **3,579** | **2,747** | **22,851** | **–** | **31,013** | 28,557 |
| Fair value | **77** | **1,675** | **3,254** | **2,383** | **19,475** | **–** | **26,864** | 28,307 |
| Yield (%) | **1.10** | **1.47** | **1.65** | **1.73** | **1.57** | **–** | **1.59** | 1.30 |
| Corporate debt | | | | | | | | |
| Amortized cost | **407** | **530** | **988** | **128** | **59** | **–** | **2,112** | 1,641 |
| Fair value | **457** | **501** | **919** | **125** | **55** | **–** | **2,057** | 1,651 |
| Yield (%) | **1.05** | **1.59** | **2.39** | **1.54** | **0.22** | **–** | **1.82** | 1.30 |
| Total amortized cost | **4,959** | **24,339** | **22,705** | **27,790** | **26,797** | **–** | **106,590** | 49,970 |
| Total fair value | **5,199** | **23,151** | **20,517** | **23,562** | **22,403** | **–** | **94,832** | 49,810 |
| Yield (%) | **1.32** | **1.56** | **1.50** | **1.65** | **1.64** | **–** | **1.58** | 1.44 |
| **Investments in Associates and Joint Ventures** | | | | | | | | |
| Carrying value | **–** | **–** | **–** | **–** | **–** | **1,293** | **1,293** | 1,135 |
| Total carrying value or amortized cost of securities | **25,479** | **43,867** | **43,526** | **47,161** | **61,607** | **52,978** | **274,618** | 232,603 |
| Total carrying value of securities | **25,388** | **43,724** | **43,069** | **46,765** | **61,307** | **53,009** | **273,262** | 232,849 |
| **Total by Currency** (in Canadian $ equivalent) | | | | | | | | |
| Canadian dollar | **13,049** | **13,167** | **14,499** | **10,823** | **10,895** | **25,203** | **87,636** | 85,933 |
| U.S. dollar | **9,620** | **29,363** | **28,094** | **35,743** | **50,334** | **24,217** | **177,371** | 140,422 |
| Other currencies | **2,719** | **1,194** | **476** | **199** | **78** | **3,589** | **8,255** | 6,494 |
| Total securities | **25,388** | **43,724** | **43,069** | **46,765** | **61,307** | **53,009** | **273,262** | 232,849 |

(1) These amounts are either supported by insured mortgages or issued by U.S. agencies and government-sponsored enterprises. NHA refers to the National Housing Act, MBS refers to mortgage-backed securities and CMO refers to collateralized mortgage obligations.

Yields in the table above are calculated using the cost of the security and the contractual interest rate associated with each security, adjusted for any amortization of premiums and discounts. Tax effects are not taken into consideration. The term to maturity included in the table above is based on the contractual maturity date of the security. Actual maturities could differ, as issuers may have the right to call or prepay obligations.

## Unrealized Gains and Losses on FVOCI Securities

The following table summarizes unrealized gains and losses:

| (Canadian $ in millions) | | | | 2022 | | | | 2021 |
|---|---|---|---|---|---|---|---|---|
| | **Cost or amortized cost** | **Gross unrealized gains** | **Gross unrealized losses** | **Fair value** | Cost or amortized cost | Gross unrealized gains | Gross unrealized losses | Fair value |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | **12,498** | **11** | **208** | **12,301** | 13,087 | 62 | 84 | 13,065 |
| Canadian provincial and municipal governments | **4,724** | **6** | **159** | **4,571** | 2,973 | 29 | 15 | 2,987 |
| U.S. federal government | **3,403** | **–** | **293** | **3,110** | 21,041 | 282 | 297 | 21,026 |
| U.S. states, municipalities and agencies | **3,863** | **5** | **154** | **3,714** | 4,034 | 85 | 5 | 4,114 |
| Other governments | **6,532** | **4** | **125** | **6,411** | 6,476 | 55 | 29 | 6,502 |
| NHA MBS | **1,376** | **1** | **14** | **1,363** | 1,122 | 6 | 3 | 1,125 |
| U.S. agency MBS and CMO | **8,196** | **12** | **303** | **7,905** | 10,894 | 151 | 34 | 11,011 |
| Corporate debt | **4,203** | **25** | **195** | **4,033** | 3,147 | 34 | 20 | 3,161 |
| Corporate equity | **122** | **31** | **–** | **153** | 103 | 29 | – | 132 |
| Total | **44,917** | **95** | **1,451** | **43,561** | 62,877 | 733 | 487 | 63,123 |

Unrealized gains (losses) may be offset by related (losses) gains on hedge contracts.

## Interest, Dividend and Fee Income

Interest, dividend and fee income has been included in our Consolidated Statement of Income as follows, excluding our share of profit (loss) in associates and joint ventures and trading securities. Related income for trading securities is included under trading-related revenue in Note 17.

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| FVTPL | **28** | 22 |
| FVOCI | **650** | 470 |
| Amortized cost | **1,295** | 419 |
| Total | **1,973** | 911 |

## Non-Interest Revenue

Net gains and losses from securities, excluding gains and losses on trading securities, have been included in our Consolidated Statement of Income as follows:

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| FVTPL securities | **268** | 535 |
| FVOCI securities – realized gains (losses) (1) | **14** | 57 |
| Impairment losses | **(1)** | (1) |
| Securities gains, other than trading | **281** | 591 |

(1) Gains (losses) are net of (losses) gains on hedge contracts.

Gains and losses on trading securities are included in trading-related revenue in Note 17.

Interest and dividend income and gains (losses) on securities held in our insurance business are recorded in non-interest revenue, insurance revenue, in our Consolidated Statement of Income. These include:

- Interest and dividend income of $397 million for the year ended October 31, 2022 ($379 million for the year ended October 31, 2021). Interest income is calculated using the effective interest method;
- Gains (losses) from securities designated at FVTPL of $(1,954) million for the year ended October 31, 2022 ($(202) million for the year ended October 31, 2021); and
- Realized gains (losses) from FVOCI securities of $nil million for the year ended October 31, 2022 ($1 million for the year ended October 31, 2021).

# Note 4: Loans and Allowance for Credit Losses

## Loans

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method where the cash flows of those loans represent solely payments of principal and interest, otherwise those loans are measured at FVTPL. Where the loans are held with the objective of both collecting contractual cash flows and selling the loans, and the cash flows represent solely payments of principal and interest, these loans are measured at FVOCI. The effective interest method allocates interest income over the expected term of the loan by applying the effective interest rate to the carrying amount of the loan. The effective interest rate is defined as the rate that exactly discounts estimated future cash receipts through the expected term of the loan to the net carrying amount of the loan. Under the effective interest method, the amount recognized in interest, dividend and fee income, loans, varies over the term of the loan based on the principal outstanding. The treatment of interest income for impaired loans is described below.

## Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements represent the amounts we will receive as a result of our commitment to return or resell securities that we have borrowed or purchased, back to the original lender or seller, on a specified date at a specified price. We account for these instruments as if they were loans.

## Lending Fees

Lending fees primarily arise in Personal and Commercial Banking and BMO Capital Markets. The accounting treatment for lending fees varies depending on the transaction. Some loan origination, restructuring and renegotiation fees are recorded as interest income over the term of the loan, while other lending fees are taken into income at the time of loan origination. Commitment fees are calculated as a percentage of the facility balance at the end of each period. The fees are recorded as interest income over the term of the loan, unless we believe the loan commitment will not be used. In the latter case, commitment fees are recorded as lending fees earned over the commitment period. Loan syndication fees are payable and included in lending fees at the time the syndication is completed, unless the yield on any loans we retain is less than that of other comparable lenders involved in the financing. In the latter case, an appropriate portion of the syndication fee is recorded as interest income over the term of the loan.

## Impaired Loans

We classify a loan as impaired (Stage 3) when one or more loss events have occurred, such as bankruptcy, payment default or when collection of the full amount of principal and interest is no longer reasonably assured. Loans are in default when the borrower is unlikely to pay its credit obligations in full without recourse by the bank, such as realizing security, or when the borrower's payments are more than a defined number of days past due.

Generally, consumer loans in both Canada and the U.S. are classified as impaired when payment is contractually 90 days past due, or one year past due for residential mortgages if guaranteed by the Government of Canada. Credit card loans are immediately written off when principal or interest payments are 180 days past due, and are not reported as impaired. In Canada, consumer instalment loans, other personal loans and some small business loans are normally written off when they are one year past due. In the U.S., all consumer loans are generally written off when they are 180 days past due, except for non-real estate term loans, which are generally written off when they are 120 days past due. For the purpose of measuring the amount to be written off, the determination of the recoverable amount includes an estimate of future recoveries.

Corporate and commercial loans are classified as impaired when we determine there is no longer reasonable assurance that principal or interest will be collected in their entirety on a timely basis. Generally, we consider corporate and commercial loans to be impaired when payments are 90 days past due. Corporate and commercial loans are written off following a review on an individual loan basis that confirms all reasonable recovery attempts have been exhausted.

Overdrafts are considered to be past due once the customer has breached an advised limit or has been advised of a limit lower than currently outstanding or, in the case of retail overdrafts, has not brought the overdraft down to a $nil balance within a specified time period.

A loan will be reclassified to performing status when we determine that there is reasonable assurance of full and timely repayment of interest and principal in accordance with the terms and conditions of the loan, and that none of the criteria for classification of the loan as impaired continues to apply.

Once a loan is identified as impaired, we continue to recognize interest income based on the original effective interest rate on the loan amount net of its related allowance. In the periods following the recognition of impairment, adjustments to the allowance for these loans reflecting the time value of money are recognized as interest income. Interest income on impaired loans of $55 million was recognized for the year ended October 31, 2022 ($71 million in 2021).

During the year ended October 31, 2022, we recorded a net gain of $3 million before tax (loss of $10 million in 2021) on the sale of impaired and written-off loans.

## Allowance for Credit Losses (ACL)

The allowance for credit losses recorded in our Consolidated Balance Sheet is maintained at a level that we consider adequate to absorb credit-related losses on our loans and other credit instruments. The allowance for credit losses amounted to $2,998 million as at October 31, 2022 ($2,958 million as at October 31, 2021), of which $2,617 million ($2,564 million as at October 31, 2021) was recorded in loans and $381 million ($394 million as at October 31, 2021) was recorded in other liabilities in our Consolidated Balance Sheet.

Significant changes in the gross balances, including originations, maturities and repayments in the normal course of operations, impact the allowance for credit losses.

*Allowance on Performing Loans*

We maintain an allowance in order to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering guidelines issued by OSFI.

Under the IFRS 9 ECL methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been an actual impairment. We recognize a loss allowance at an amount generally equal to 12-month expected credit losses, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). We will record expected credit losses over the remaining life of performing financial assets which are considered to have experienced a significant increase in credit risk (Stage 2).

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The bank's methodology for determining significant increase in credit risk is based on the change in probability of default (PD) between origination and reporting date, assessed using probability-weighted scenarios as well as certain other criteria, such as 30-day past due and watchlist status.

For each exposure, ECL is a function of PD, exposure at default (EAD) and loss given default (LGD), with the timing of the loss also considered, and is estimated by incorporating forward-looking economic information and through the use of experienced credit judgment to reflect factors not captured in ECL models.

PD represents the likelihood that a loan will not be repaid and will go into default in either a 12-month horizon for Stage 1 or a lifetime horizon for Stage 2. PD for each individual instrument is modelled based on historical data and is estimated based on current market conditions and reasonable and supportable information about future economic conditions.

EAD is modelled based on historical data and represents an estimate of the amount of credit exposure outstanding at the time a default may occur. For off-balance sheet and undrawn amounts, EAD includes an estimate of any further amounts to be drawn at the time of default.

LGD is the amount that may not be recovered in the event of default and is modelled based on historical data and reasonable and supportable information about future economic conditions, where appropriate. LGD takes into consideration the amount and quality of any collateral held.

We consider past events, current market conditions and reasonable and supportable forward-looking information about future economic conditions in determining the amount of expected losses. In assessing information about possible future economic conditions, we utilize multiple economic scenarios, including our base case scenario, which in our view represents the most probable outcome, as well as benign and adverse scenarios, all of which are developed by our Economics group. Key economic variables used in the determination of the allowance for credit losses reflect the geographic diversity of our portfolios, where appropriate.

In considering the lifetime of a loan, the contractual period of the loan, including prepayment, extension and other options, is generally used. For revolving instruments, such as credit cards, which may not have a defined contractual period, the lifetime is based on historical behaviour.

Our ECL methodology also requires the use of experienced credit judgment to incorporate the estimated impact of factors that are not captured in the modelled ECL results. We applied experienced credit judgment to reflect the continuing impact of the uncertain environment on credit conditions and the economy as a result of the pandemic, as well as the estimated impacts of high inflation and supply-chain disruptions.

*Allowance on Impaired Loans*

We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance or write-off should be recorded (excluding credit card loans, which are written off when principal or interest payments are 180 days past due). The review of individually significant problem loans is conducted at least quarterly by the account managers, each of whom assesses the ultimate collectability and estimated recoveries for a specific loan based on all events and conditions that are relevant to the loan. This assessment is then reviewed and approved by an independent credit officer.

**Individually Significant Impaired Loans**

To determine the amount we expect to recover from an individually significant impaired loan, we use the value of the estimated future cash flows discounted at the loan's original effective interest rate. The determination of estimated future cash flows of a collateralized impaired loan reflects the expected realization of the underlying security, net of expected costs and any amounts legally required to be paid to the borrower. Security can vary by type of loan and may include cash, securities, real estate properties, accounts receivable, guarantees, inventory or other capital assets.

**Individually Insignificant Impaired Loans**

Residential mortgages and consumer instalment and other personal loans are individually insignificant and may be assessed individually or collectively for losses at the time of impairment, taking into account historical loss experience and expectations of future economic conditions. Collectively assessed loans are grouped together by similar risk characteristics, such as type of instrument, geographic location, industry, type of collateral and term to maturity.

*Loans: Credit Risk Exposure*

The following table sets out our credit risk exposure for all loans carried at amortized cost, FVOCI or FVTPL as at October 31, 2022 and 2021. Stage 1 represents those performing loans carried with up to a 12-month expected credit loss, Stage 2 represents those performing loans carried with a lifetime expected credit loss, and Stage 3 represents those loans with a lifetime expected credit loss that are credit impaired.

| (Canadian $ in millions) | | | | 2022 | | | | 2021 |
|---|---|---|---|---|---|---|---|---|
| | **Stage 1** | **Stage 2** | **Stage 3** (5) | **Total** | Stage 1 | Stage 2 | Stage 3 (5) | Total |
| **Loans: Residential mortgages** | | | | | | | | |
| Exceptionally low | **7** | **–** | **–** | **7** | 4 | – | – | 4 |
| Very low | **94,743** | **81** | **–** | **94,824** | 94,566 | 179 | – | 94,745 |
| Low | **31,617** | **3,134** | **–** | **34,751** | 23,471 | 1,293 | – | 24,764 |
| Medium | **13,474** | **3,871** | **–** | **17,345** | 12,066 | 2,250 | – | 14,316 |
| High | **138** | **341** | **–** | **479** | 167 | 306 | – | 473 |
| Not rated | **1,126** | **53** | **–** | **1,179** | 1,051 | 46 | – | 1,097 |
| Impaired | **–** | **–** | **295** | **295** | – | – | 351 | 351 |
| Gross residential mortgages | **141,105** | **7,480** | **295** | **148,880** | 131,325 | 4,074 | 351 | 135,750 |
| Allowance for credit losses | **59** | **66** | **10** | **135** | 46 | 39 | 12 | 97 |
| Carrying amount | **141,046** | **7,414** | **285** | **148,745** | 131,279 | 4,035 | 339 | 135,653 |
| **Loans: Consumer instalment and other personal** | | | | | | | | |
| Exceptionally low | **1,792** | **35** | **–** | **1,827** | 1,487 | 37 | – | 1,524 |
| Very low | **33,554** | **83** | **–** | **33,637** | 30,672 | 8 | – | 30,680 |
| Low | **24,369** | **1,307** | **–** | **25,676** | 21,660 | 534 | – | 22,194 |
| Medium | **13,536** | **4,633** | **–** | **18,169** | 13,336 | 3,607 | – | 16,943 |
| High | **873** | **1,525** | **–** | **2,398** | 661 | 1,375 | – | 2,036 |
| Not rated | **4,052** | **32** | **–** | **4,084** | 3,450 | 50 | – | 3,500 |
| Impaired | **–** | **–** | **312** | **312** | – | – | 287 | 287 |
| Gross consumer instalment and other personal | **78,176** | **7,615** | **312** | **86,103** | 71,266 | 5,611 | 287 | 77,164 |
| Allowance for credit losses | **101** | **288** | **102** | **491** | 113 | 333 | 91 | 537 |
| Carrying amount | **78,075** | **7,327** | **210** | **85,612** | 71,153 | 5,278 | 196 | 76,627 |
| **Loans: Credit cards** (1) | | | | | | | | |
| Exceptionally low | **2,920** | **–** | **–** | **2,920** | 2,532 | – | – | 2,532 |
| Very low | **442** | **1** | **–** | **443** | 450 | – | – | 450 |
| Low | **1,569** | **51** | **–** | **1,620** | 1,801 | 66 | – | 1,867 |
| Medium | **2,918** | **792** | **–** | **3,710** | 1,743 | 663 | – | 2,406 |
| High | **316** | **563** | **–** | **879** | 75 | 287 | – | 362 |
| Not rated | **90** | **1** | **–** | **91** | 486 | – | – | 486 |
| Impaired | **–** | **–** | **–** | **–** | – | – | – | – |
| Gross credit cards | **8,255** | **1,408** | **–** | **9,663** | 7,087 | 1,016 | – | 8,103 |
| Allowance for credit losses | **69** | **207** | **–** | **276** | 67 | 209 | – | 276 |
| Carrying amount | **8,186** | **1,201** | **–** | **9,387** | 7,020 | 807 | – | 7,827 |
| **Loans: Business and government** (2) | | | | | | | | |
| Acceptable | | | | | | | | |
| Investment grade | **187,245** | **6,765** | **–** | **194,010** | 144,807 | 1,446 | – | 146,253 |
| Sub-investment grade | **98,451** | **22,390** | **–** | **120,841** | 85,375 | 14,534 | – | 99,909 |
| Watchlist | **–** | **6,310** | **–** | **6,310** | – | 6,137 | – | 6,137 |
| Impaired | **–** | **–** | **1,384** | **1,384** | – | – | 1,531 | 1,531 |
| Gross business and government | **285,696** | **35,465** | **1,384** | **322,545** | 230,182 | 22,117 | 1,531 | 253,830 |
| Allowance for credit losses | **608** | **675** | **432** | **1,715** | 529 | 730 | 395 | 1,654 |
| Carrying amount | **285,088** | **34,790** | **952** | **320,830** | 229,653 | 21,387 | 1,136 | 252,176 |
| Gross total loans and acceptances | **513,232** | **51,968** | **1,991** | **567,191** | 439,860 | 32,818 | 2,169 | 474,847 |
| Net total loans and acceptances | **512,395** | **50,732** | **1,447** | **564,574** | 439,105 | 31,507 | 1,671 | 472,283 |
| **Commitments and financial guarantee contracts** | | | | | | | | |
| Acceptable | | | | | | | | |
| Investment grade | **182,153** | **5,134** | **–** | **187,287** | 154,975 | 2,367 | – | 157,342 |
| Sub-investment grade | **45,920** | **14,047** | **–** | **59,967** | 46,827 | 8,164 | – | 54,991 |
| Watchlist | **2** | **2,176** | **–** | **2,178** | – | 2,453 | – | 2,453 |
| Impaired | **–** | **–** | **292** | **292** | – | – | 682 | 682 |
| Allowance for credit losses | **194** | **174** | **13** | **381** | 195 | 186 | 13 | 394 |
| Carrying amount (3)(4) | **227,881** | **21,183** | **279** | **249,343** | 201,607 | 12,798 | 669 | 215,074 |

(1) Credit card loans are immediately written off when principal or interest payments are 180 days past due, and as a result are not reported as impaired in Stage 3.
(2) Includes customers' liability under acceptances.
(3) Represents the total contractual amounts of undrawn credit facilities and other off-balance sheet exposures, excluding personal lines of credit and credit cards that are unconditionally cancellable at our discretion.
(4) Certain commercial borrower commitments are conditional and may include recourse to counterparties.
(5) 92% of Stage 3 loans were either fully or partially collateralized as at October 31, 2022 (92% as at October 31, 2021).

The following table shows the continuity in the loss allowance, by product type, for the years ended October 31, 2022 and 2021. Transfers represent the amount of ECL that moved between stages during the year, for example, moving from a 12-month (Stage 1) to a lifetime (Stage 2) ECL measurement basis. Net remeasurements represent the ECL impact due to transfers between stages, as well as changes in economic forecasts and credit quality. Model changes include new calculation models or methodologies.

| (Canadian $ in millions) | | | | **2022** | | | | 2021 |
|---|---|---|---|---|---|---|---|---|
| | **Stage 1** | **Stage 2** | **Stage 3** | **Total** | Stage 1 | Stage 2 | Stage 3 | Total |
| **Loans: Residential mortgages** | | | | | | | | |
| Balance as at beginning of year | **46** | **40** | **19** | **105** | 51 | 75 | 26 | 152 |
| Transfer to Stage 1 | **39** | **(37)** | **(2)** | **–** | 62 | (53) | (9) | – |
| Transfer to Stage 2 | **(4)** | **10** | **(6)** | **–** | (4) | 21 | (17) | – |
| Transfer to Stage 3 | **–** | **(7)** | **7** | **–** | – | (13) | 13 | – |
| Net remeasurement of loss allowance | **(52)** | **61** | **8** | **17** | (93) | 24 | 29 | (40) |
| Loan originations | **34** | **–** | **–** | **34** | 38 | – | – | 38 |
| Derecognitions and maturities | **(5)** | **(7)** | **–** | **(12)** | (7) | (12) | – | (19) |
| Model changes | **2** | **5** | **–** | **7** | – | – | – | – |
| Total Provision for Credit Losses (PCL) (1) | **14** | **25** | **7** | **46** | (4) | (33) | 16 | (21) |
| Write-offs (2) | **–** | **–** | **(5)** | **(5)** | – | – | (12) | (12) |
| Recoveries of previous write-offs | **–** | **–** | **7** | **7** | – | – | 11 | 11 |
| Foreign exchange and other | **(1)** | **2** | **(12)** | **(11)** | (1) | (2) | (22) | (25) |
| Balance as at end of year | **59** | **67** | **16** | **142** | 46 | 40 | 19 | 105 |
| **Loans: Consumer instalment and other personal** | | | | | | | | |
| Balance as at beginning of year | **128** | **357** | **91** | **576** | 148 | 454 | 105 | 707 |
| Transfer to Stage 1 | **230** | **(221)** | **(9)** | **–** | 297 | (287) | (10) | – |
| Transfer to Stage 2 | **(41)** | **71** | **(30)** | **–** | (30) | 66 | (36) | – |
| Transfer to Stage 3 | **(5)** | **(82)** | **87** | **–** | (7) | (94) | 101 | – |
| Net remeasurement of loss allowance | **(263)** | **226** | **103** | **66** | (289) | 247 | 103 | 61 |
| Loan originations | **92** | **–** | **–** | **92** | 86 | – | – | 86 |
| Derecognitions and maturities | **(22)** | **(39)** | **–** | **(61)** | (27) | (49) | – | (76) |
| Model changes | **(9)** | **(13)** | **–** | **(22)** | (48) | 26 | – | (22) |
| Total PCL (1) | **(18)** | **(58)** | **151** | **75** | (18) | (91) | 158 | 49 |
| Write-offs (2) | **–** | **–** | **(205)** | **(205)** | – | – | (236) | (236) |
| Recoveries of previous write-offs | **–** | **–** | **80** | **80** | – | – | 86 | 86 |
| Foreign exchange and other | **1** | **5** | **(15)** | **(9)** | (2) | (6) | (22) | (30) |
| Balance as at end of year | **111** | **304** | **102** | **517** | 128 | 357 | 91 | 576 |
| **Loans: Credit cards** | | | | | | | | |
| Balance as at beginning of year | **114** | **245** | **–** | **359** | 110 | 321 | – | 431 |
| Transfer to Stage 1 | **149** | **(149)** | **–** | **–** | 194 | (194) | – | – |
| Transfer to Stage 2 | **(34)** | **34** | **–** | **–** | (28) | 28 | – | – |
| Transfer to Stage 3 | **(2)** | **(114)** | **116** | **–** | (1) | (172) | 173 | – |
| Net remeasurement of loss allowance | **(156)** | **236** | **74** | **154** | (191) | 292 | 21 | 122 |
| Loan originations | **54** | **–** | **–** | **54** | 39 | – | – | 39 |
| Derecognitions and maturities | **(5)** | **(23)** | **–** | **(28)** | (7) | (29) | – | (36) |
| Model changes | **(6)** | **18** | **–** | **12** | – | – | – | – |
| Total PCL (1) | **–** | **2** | **190** | **192** | 6 | (75) | 194 | 125 |
| Write-offs (2) | **–** | **–** | **(249)** | **(249)** | – | – | (266) | (266) |
| Recoveries of previous write-offs | **–** | **–** | **78** | **78** | – | – | 94 | 94 |
| Foreign exchange and other | **1** | **3** | **(19)** | **(15)** | (2) | (1) | (22) | (25) |
| Balance as at end of year | **115** | **250** | **–** | **365** | 114 | 245 | – | 359 |
| **Loans: Business and government** | | | | | | | | |
| Balance as at beginning of year | **662** | **855** | **401** | **1,918** | 658 | 1,258 | 608 | 2,524 |
| Transfer to Stage 1 | **313** | **(267)** | **(46)** | **–** | 505 | (496) | (9) | – |
| Transfer to Stage 2 | **(166)** | **243** | **(77)** | **–** | (101) | 172 | (71) | – |
| Transfer to Stage 3 | **(1)** | **(52)** | **53** | **–** | (2) | (97) | 99 | – |
| Net remeasurement of loss allowance | **(437)** | **127** | **224** | **(86)** | (549) | 334 | 138 | (77) |
| Loan originations | **488** | **–** | **–** | **488** | 329 | – | – | 329 |
| Derecognitions and maturities | **(223)** | **(168)** | **–** | **(391)** | (140) | (214) | – | (354) |
| Model changes | **19** | **(32)** | **–** | **(13)** | (5) | (19) | – | (24) |
| Total PCL (1) | **(7)** | **(149)** | **154** | **(2)** | 37 | (320) | 157 | (126) |
| Write-offs (2) | **–** | **–** | **(153)** | **(153)** | – | – | (336) | (336) |
| Recoveries of previous write-offs | **–** | **–** | **50** | **50** | – | – | 42 | 42 |
| Foreign exchange and other | **91** | **83** | **(13)** | **161** | (33) | (83) | (70) | (186) |
| Balance as at end of year | **746** | **789** | **439** | **1,974** | 662 | 855 | 401 | 1,918 |
| Total as at end of year | **1,031** | **1,410** | **557** | **2,998** | 950 | 1,497 | 511 | 2,958 |
| Comprised of: Loans | **837** | **1,236** | **544** | **2,617** | 755 | 1,311 | 498 | 2,564 |
| Other credit instruments (3) | **194** | **174** | **13** | **381** | 195 | 186 | 13 | 394 |

(1) Excludes PCL on other assets of $2 million for the year ended October 31, 2022 ($(7) million for the year ended October 31, 2021).

(2) Generally, we continue to seek recovery on amounts that were written off during the year, unless the loan is sold, we no longer have the right to collect or we have exhausted all reasonable efforts to collect.

(3) Other credit instruments, including off-balance sheet items, are recorded in other liabilities in our Consolidated Balance Sheet.

Loans and allowance for credit losses by geographic region as at October 31, 2022 and 2021 are as follows:

| (Canadian $ in millions) | | | 2022 | | | | | 2021 |
|---|---|---|---|---|---|---|---|---|
| | **Gross amount** | **Allowance for credit losses on impaired loans** (2) | **Allowance for credit losses on performing loans** (3) | **Net amount** | Gross amount | Allowance for credit losses on impaired loans (2) | Allowance for credit losses on performing loans (3) | Net amount |
| By geographic region (1): | | | | | | | | |
| Canada | **342,430** | **363** | **1,102** | **340,965** | 299,905 | 345 | 1,143 | 298,417 |
| United States | **200,439** | **176** | **959** | **199,304** | 153,479 | 153 | 910 | 152,416 |
| Other countries | **11,087** | **5** | **12** | **11,070** | 7,442 | – | 13 | 7,429 |
| Total | **553,956** | **544** | **2,073** | **551,339** | 460,826 | 498 | 2,066 | 458,262 |

(1) Geographic region is based upon the country of ultimate risk.
(2) Excludes allowance for credit losses on impaired loans of $13 million for other credit instruments, which is included in other liabilities ($13 million as at October 31, 2021).
(3) Excludes allowance for credit losses on performing loans of $368 million for other credit instruments, which is included in other liabilities ($381 million as at October 31, 2021).

Impaired (Stage 3) loans, including the related allowances, as at October 31, 2022 and 2021 are as follows:

| (Canadian $ in millions) | | 2022 | | | | 2021 |
|---|---|---|---|---|---|---|
| | **Gross impaired amount** (3) | **Allowance for credit losses on impaired loans** (4) | **Net impaired amount** (3) | Gross impaired amount (3) | Allowance for credit losses on impaired loans (4) | Net impaired amount (3) |
| Residential mortgages | **295** | **10** | **285** | 351 | 12 | 339 |
| Consumer instalment and other personal | **312** | **102** | **210** | 287 | 91 | 196 |
| Business and government (1) | **1,384** | **432** | **952** | 1,531 | 395 | 1,136 |
| Total | **1,991** | **544** | **1,447** | 2,169 | 498 | 1,671 |
| By geographic region (2): | | | | | | |
| Canada | **1,158** | **363** | **795** | 1,195 | 345 | 850 |
| United States | **820** | **176** | **644** | 974 | 153 | 821 |
| Other countries | **13** | **5** | **8** | – | – | – |
| Total | **1,991** | **544** | **1,447** | 2,169 | 498 | 1,671 |

(1) Includes customers' liability under acceptances.
(2) Geographic region is based upon the country of ultimate risk.
(3) Gross impaired loans and net impaired loans exclude purchased credit impaired loans.
(4) Excludes allowance for credit losses on impaired loans of $13 million for other credit instruments, which is included in other liabilities ($13 million as at October 31, 2021).

## Loans Past Due Not Impaired

Loans that are past due but not classified as impaired are loans where our customers have failed to make payments when contractually due but for which we expect the full amount of principal and interest payments to be collected, or loans which are held at fair value. The following table presents loans that are past due but not classified as impaired as at October 31, 2022 and 2021. Loans less than 30 days past due are excluded as they are not generally representative of the borrowers' ability to meet their payment obligations.

| (Canadian $ in millions) | | | 2022 | | | 2021 |
|---|---|---|---|---|---|---|
| | **30 to 89 days** | **90 days or more** | **Total** | 30 to 89 days | 90 days or more | Total |
| Residential mortgages | **411** | **19** | **430** | 404 | 14 | 418 |
| Credit card, consumer instalment and other personal | **392** | **84** | **476** | 279 | 59 | 338 |
| Business and government | **198** | **38** | **236** | 264 | 33 | 297 |
| Total | **1,001** | **141** | **1,142** | 947 | 106 | 1,053 |

Fully secured loans with amounts between 90 and 180 days past due that we have not classified as impaired totalled $43 million as at October 31, 2022 ($36 million as at October 31, 2021).

## ECL Sensitivity and Key Economic Variables

The allowance for performing loans is sensitive to changes in both economic forecasts and the probability-weight assigned to each forecast scenario. Many of the factors have a high degree of interdependency, although there is no single factor to which loan impairment allowances as a whole are sensitive.

As at October 31, 2022, our benign scenario involves a materially stronger economic environment than the base case forecast due to a resolution of the Ukraine war and a stronger response of households to elevated savings, with a considerably lower unemployment rate.

As at October 31, 2022, our base case scenario depicts a weak economy in both Canada and the U.S., as growth is tempered by high inflation, rapidly-rising interest rates, lingering supply-chain disruptions, and weaker global demand. In contrast, our base case economic forecast as at October 31, 2021, depicted a stronger economic forecast in both Canada and the U.S. over the projection period. If we assumed a 100% base case economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately $1,900 million as at October 31, 2022 ($1,725 million as at October 31, 2021) compared to the reported allowance for performing loans of $2,441 million ($2,447 million as at October 31, 2021).

As at October 31, 2022, our adverse economic scenario depicts a contracting economy with annual average real GDP declining in both Canada and the U.S. in response to a potential escalation of the war in Ukraine. The adverse case as at October 31, 2021 depicted a slightly weaker economic environment in Canada and the U.S. due to higher initial levels for the unemployment rates. If we assumed a 100% adverse economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately $3,250 million as at October 31, 2022 ($3,825 million as at October 31, 2021) compared to the reported allowance for performing loans of $2,441 million ($2,447 million as at October 31, 2021).

Actual results in a recession will differ as our portfolio will change through time due to migration, growth, risk mitigation actions and other factors. In addition, our allowance will reflect the three economic scenarios used in assessing the allowance, with weightings attached to adverse and benign scenarios often unequally weighted and the weightings will change through time.

The following table shows the key economic variables used to estimate the allowance on performing loans forecast over the next 12 months or lifetime measurement period. While the values disclosed below are national variables, we use regional variables in the underlying models and consider factors impacting particular industries where appropriate.

| | As at October 31, 2022 | | | | | | As at October 31, 2021 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All figures are average annual values | Benign scenario | | Base scenario | | Adverse scenario | | Benign scenario | | Base scenario | | Adverse scenario | |
| | First 12 months | Remaining horizon (1) | First 12 months | Remaining horizon (1) | First 12 months | Remaining horizon (1) | First 12 months | Remaining horizon (1) | First 12 months | Remaining horizon (1) | First 12 months | Remaining horizon (1) |
| Real GDP growth rates (2) | | | | | | | | | | | | |
| Canada | **3.7%** | **2.2%** | **1.5%** | **1.1%** | **(2.3)%** | **0.4%** | 6.3% | 4.0% | 4.0% | 2.9% | (2.7)% | 0.4% |
| United States | **2.4%** | **2.1%** | **0.2%** | **1.3%** | **(3.3)%** | **0.6%** | 7.1% | 3.2% | 4.8% | 2.4% | (1.2)% | 0.6% |
| Corporate BBB 10-year spread | | | | | | | | | | | | |
| Canada | **1.9%** | **1.9%** | **2.4%** | **2.2%** | **3.7%** | **3.9%** | 1.4% | 1.8% | 1.8% | 2.0% | 3.6% | 3.9% |
| United States | **1.8%** | **1.9%** | **2.2%** | **2.2%** | **4.2%** | **3.9%** | 0.9% | 1.3% | 1.2% | 1.6% | 4.2% | 3.9% |
| Unemployment rates | | | | | | | | | | | | |
| Canada | **4.3%** | **3.6%** | **5.9%** | **6.5%** | **8.0%** | **9.9%** | 6.0% | 4.8% | 6.6% | 5.6% | 10.8% | 12.4% |
| United States | **3.2%** | **2.6%** | **4.2%** | **4.8%** | **6.5%** | **8.4%** | 4.2% | 3.0% | 4.7% | 3.6% | 8.5% | 10.6% |
| Housing Price Index (2) | | | | | | | | | | | | |
| Canada (3) | **(6.7)%** | **2.1%** | **(10.0)%** | **(1.0)%** | **(13.6)%** | **(8.0)%** | 18.2% | 7.1% | 15.1% | 4.0% | (6.4)% | (9.5)% |
| United States (4) | **1.6%** | **(0.7)%** | **(0.9)%** | **(2.6)%** | **(7.5)%** | **(8.4)%** | 14.6% | 5.7% | 12.3% | 3.8% | (6.1)% | (7.8)% |

(1) The remaining forecast period is two years.
(2) Real gross domestic product (GDP) and housing price index are averages of quarterly year-over-year growth rates.
(3) In Canada, we use the HPI Benchmark Composite.
(4) In the United States, we use the National Case-Shiller House Price Index.
Certain comparative figures have been reclassified to conform with the current year's presentation.

The ECL approach requires the recognition of credit losses generally based on 12 months of expected losses for performing loans (Stage 1) and the recognition of lifetime expected losses on performing loans that have experienced a significant increase in credit risk since origination (Stage 2). Under our current probability-weighted scenarios, if all our performing loans were in Stage 1, our models would generate an allowance for performing loans of approximately $1,850 million compared to the reported allowance for performing loans of $2,441 million as at October 31, 2022 ($1,775 million compared to the reported allowance for performing loans of $2,447 million as at October 31, 2021).

## Renegotiated Loans

From time to time we modify the contractual terms of a loan due to the poor financial condition of the borrower. We assess renegotiated loans for impairment consistent with our existing policies for impairment. When renegotiation leads to significant concessions being granted, and the concessions are for economic or legal reasons related to the borrower's financial difficulty that we would not otherwise consider, the loan is classified as impaired. We consider one or a combination of the following to be significant concessions: (1) a reduction of the stated interest rate, (2) an extension of the maturity date or dates at a stated interest rate lower than the current market rate for a new loan with similar terms, or (3) forgiveness of principal or accrued interest.

Renegotiated loans remain in performing status if the modifications are not considered to be significant or are returned to performing status when none of the criteria for classification as impaired continues to apply.

The carrying value of loans with lifetime allowance for credit losses modified during the year ended October 31, 2022 was $91 million ($37 million in 2021). Modified loans of $16 million ($21 million in 2021) were written off during the year ended October 31, 2022. As at October 31, 2022, $13 million ($29 million as at October 31, 2021) of loans previously modified saw their loss allowance during the year change from lifetime to 12-month expected credit loss.

## Foreclosed Assets

Property or other assets that we receive from borrowers to satisfy their loan commitments are classified as either held for own use or held-for-sale according to management's intention, recorded initially at fair value for assets held for own use and at the lower of carrying value or fair value less costs to sell for any assets held-for-sale. Assets held for own use are subsequently accounted for in accordance with the relevant asset classification and assets held-for-sale are assessed for impairment.

During the year ended October 31, 2022, we foreclosed on impaired loans and received $24 million of real estate properties that we classified as held-for-sale ($27 million in 2021). As at October 31, 2022, real estate properties held-for-sale totalled $13 million ($11 million as at October 31, 2021). These properties are disposed of when considered appropriate.

## Collateral

Collateral is used to manage credit risk related to securities borrowed or purchased under resale agreements, residential mortgages, consumer instalment and other personal loans, and business and government loans. Additional information on our collateral requirements is included in Notes 14 and 24, as well as in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

# Note 5: Risk Management

We have an enterprise-wide approach to the identification, measurement, monitoring and control of risks faced across our organization.
The key risks related to our financial instruments are classified as credit and counterparty, market, and liquidity and funding risk. The pandemic and economic headwinds, including rising interest rates and inflation, impact certain risks as outlined in the Enterprise-Wide Risk Management section of our Management's Discussion and Analysis and where those risks are related to financial instruments, they have been included in the blue-tinted font as referenced below.

## Credit and Counterparty Risk

Credit and counterparty risk is the potential for loss due to the failure of a borrower, endorser, guarantor or counterparty to repay a loan or honour another predetermined financial obligation. Credit risk arises predominantly with respect to loans, over-the-counter and centrally cleared derivatives and other credit instruments. This is the most significant measurable risk that we face.

Our risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report. Additional information on credit risk related to loans and derivatives is included in Notes 4 and 8, respectively.

## Market Risk

Market risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, credit spreads, foreign exchange rates, equity and commodity prices and their implied volatilities, and includes the risk of credit migration and default in our trading book. We incur market risk in our trading and underwriting activities, as well as in our structural banking activities.

Our market risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

## Liquidity and Funding Risk

Liquidity and funding risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. It is our policy to ensure that sufficient liquid assets and funding capacity are available to meet financial commitments, including liabilities to depositors and suppliers, as well as lending, investment and pledging commitments, even in times of stress. Managing liquidity and funding risk is essential to maintaining enterprise soundness and safety, depositor confidence and earnings stability.

Our liquidity and funding risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

# Note 6: Transfers of Financial Assets

## Transfers of Financial Assets that do not Qualify for Derecognition

*Loan Securitization*

We sell Canadian residential mortgages to third-party Canadian securitization programs, including the Canada Mortgage Bond program, and directly to third-party investors under the National Housing Act Mortgage-Backed Securities (NHA MBS) program. In 2020, we also participated in the Government of Canada's Insured Mortgage Purchase Program, launched as part of its response to COVID-19. We assess whether substantially all of the risks and rewards of, or control over, the loans have been transferred to determine whether they qualify for derecognition.

Under these programs, we are entitled to the payment over time of the excess of the sum of interest and fees collected from customers, in connection with the mortgages that were sold, over the yield paid to investors, less credit losses and other costs. We also act as counterparty in interest rate swap agreements, where we pay the interest due to Canada Mortgage Bond holders and receive the interest on the underlying mortgages, which are converted into MBS through the NHA MBS program and sold to Canada Housing Trust. Since we continue to be exposed to substantially all the prepayment, interest rate and credit risk associated with the securitized mortgages, they do not qualify for derecognition. We continue to recognize the mortgages in our Consolidated Balance Sheet and the related cash proceeds are recognized as secured financing as part of securitization and structured entities' liabilities in our Consolidated Balance Sheet. The interest and fees collected, net of the yield paid to investors, are recorded in net interest income using the effective interest method over the term of the securitization. Credit losses associated with the mortgages are recorded in the provision for credit losses. During the year ended October 31, 2022, we sold $5,495 million of mortgages to these programs ($7,614 million in 2021).

*Securities Lent or Sold Under Repurchase Agreements*

Securities lent or sold under repurchase agreements represent short-term funding transactions in which we sell securities that we own and simultaneously commit to repurchase the same securities at a specified price on a specified date in the future. We retain substantially all the risks and rewards associated with the securities and we continue to recognize them in our Consolidated Balance Sheet, with the obligation to repurchase these securities recorded as secured borrowing transactions at the amount owing. The carrying value of these securities approximates the carrying value of the associated liabilities due to their short-term nature. As at October 31, 2022, the carrying values of securities lent and securities sold under repurchase agreements were $13,473 million and $90,490 million, respectively ($9,662 million and $87,894 million, respectively, as at October 31, 2021). The interest expense related to these liabilities is recorded on an accrual basis in interest expense, other liabilities, in our Consolidated Statement of Income.

The following table presents the carrying value and fair values of transferred assets that did not qualify for derecognition and the associated liabilities:

| (Canadian $ in millions) | **2022** | | 2021 | |
|---|---|---|---|---|
| | **Carrying value** (1) | **Fair value** | Carrying value (1) | Fair value |
| **Assets** | | | | |
| Trading securities (2) | **1,062** | **–** | 997 | – |
| Residential mortgages | **7,503** | **–** | 7,847 | – |
| Other related assets (3) | **10,012** | **–** | 10,009 | – |
| Total | **18,577** | **17,764** | 18,853 | 18,859 |
| Associated liabilities (4) | **17,471** | **16,846** | 18,208 | 18,323 |

(1) Carrying value of loans is net of allowance, where applicable.
(2) Trading securities represent collateralized mortgage obligations issued by third-party sponsored vehicles, where we do not substantially transfer all the risks and rewards of ownership to third-party investors.
(3) Other related assets represent payments received on account of mortgages pledged under securitization programs that have not yet been applied against the associated liabilities. The payments received are held in permitted instruments on behalf of the investors in the securitization vehicles until principal payments are required to be made on the associated liabilities. In order to compare all assets supporting the associated liabilities, this amount is added to the carrying amount of the securitized assets in the table above.
(4) Associated liabilities are recognized in securitization and structured entities' liabilities and securities lent or sold under repurchase agreements in our Consolidated Balance Sheet.

### Continuing Involvement in Transferred Financial Assets that Qualify for Derecognition

We retain the mortgage servicing rights, representing our continuing involvement, for certain mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2022, we sold and derecognized $556 million of these loans ($631 million in 2021) and recognized a $17 million gain ($32 million in 2021) in non-interest revenue, other. As at October 31, 2022, the carrying value of the mortgage servicing rights was $39 million ($29 million as at October 31, 2021) and the fair value was $54 million ($28 million as at October 31, 2021).

We retain the residual interests, representing our continuing involvement, for certain commercial mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2022, we sold and derecognized $4,014 million of these loans ($1,252 million in 2021) and recognized a gain of $7 million upon transfer ($3 million in 2021). The carrying values of our retained interests classified as debt securities at amortized cost and loans carried at amortized cost were $8 million and $37 million, respectively, as at October 31, 2022 ($7 million and $7 million as at October 31, 2021). Fair value was equal to carrying value on these dates.

In addition, we hold U.S. government agency collateralized mortgage obligations (CMOs) issued by third-party sponsored vehicles, which we may further securitize by packaging them into new CMOs prior to selling to third-party investors. Where we do not substantially transfer all the risks and rewards of ownership to third-party investors, we continue to recognize these CMOs and the related cash proceeds as secured financing in our Consolidated Balance Sheet. During the year, we sold CMOs that qualified for derecognition, where retained interests represent our continuing involvement and are managed as part of larger portfolios held for either trading, liquidity or hedging purposes. Where we sold these CMOs, associated gains and losses are recognized in non-interest revenue, trading revenues. As at October 31, 2022, the fair value of our retained interests in these CMOs was $10 million, classified as trading securities in our Consolidated Balance Sheet ($3 million as at October 31, 2021). Refer to Note 3 for further information.

### Transferred Financial Assets that Qualify for Derecognition

The Canadian government launched the Canada Emergency Business Account Program in 2020 as part of its response to COVID-19, in which we issued loans that were funded by the government, until the program was closed to new applicants as of June 30, 2021. We determined these loans qualify for derecognition, as substantially all the risks and rewards were transferred; therefore, we do not recognize these loans in our Consolidated Balance Sheet.

## Note 7: Structured Entities

We enter into certain transactions in the ordinary course of business which involve the establishment of structured entities (SEs) to facilitate or secure customer transactions and to obtain alternate sources of funding. We are required to consolidate a SE if we control the entity. We control a SE when we have power over the SE, exposure to variable returns as a result of our involvement, and the ability to exercise power to affect the amount of our returns.

In assessing whether we control a SE, we consider the entire arrangement to determine the purpose and design of the SE, the nature of any rights held through contractual arrangements, and whether we are acting as principal or agent.

We perform a reassessment of consolidation if facts and circumstances indicate that there have been changes to one or more of the elements of control over the SE. In the event such reassessment results in a loss of control, we will derecognize the related assets (including goodwill), liabilities and non-controlling interest at their carrying amounts and recognize any consideration received or retained interest at fair value with any differential recognized as a gain or loss in our Consolidated Statement of Income. Information regarding our basis of consolidation is included in Note 1.

### Consolidated Structured Entities

*Bank Securitization Vehicles*

We use securitization vehicles to securitize our Canadian credit card loans, Canadian real estate lines of credit, Canadian auto loans and U.S. equipment loans in order to obtain alternate sources of funding. The structure of these vehicles limits the activities they can undertake and the types of assets they can hold, and the vehicles have limited decision-making authority. The vehicles issue term asset-backed securities (ABS) to fund their activities. We control and consolidate these vehicles, as we have the key decision-making powers necessary to obtain the majority of the benefits of their activities.

The following table presents the carrying value and fair values of transferred assets that did not qualify for derecognition and the associated liabilities issued by our bank securitization vehicles:

| (Canadian $ in millions) | | 2022 | | 2021 |
|---|---|---|---|---|
| | **Carrying value** (1) | **Fair value** | Carrying value (1) | Fair value |
| **Assets** | | | | |
| Credit cards | **8,223** | **8,223** | 7,106 | 7,106 |
| Consumer instalment and other personal (2) | **4,769** | **4,738** | 5,228 | 5,238 |
| Business and government | **125** | **124** | 250 | 253 |
| Total | **13,117** | **13,085** | 12,584 | 12,597 |
| Associated liabilities (3) | **9,274** | **9,072** | 7,278 | 7,341 |

(1) Carrying value of loans is net of allowance.
(2) Includes real estate lines of credit and auto loans.
(3) Associated liabilities are recognized in securitization and structured entities' liabilities in our Consolidated Balance Sheet.

*Capital and Funding Vehicles*

We sponsor the Trust established in connection with the issuance of $1,250 million 4.3% Limited Recourse Capital Notes, Series 1 (Series 1 LRCNs), $750 million 5.625% Limited Recourse Capital Notes, Series 2 (Series 2 LRCNs) and $1,000 million 7.325% Limited Recourse Capital Notes, Series 3 (Series 3 LRCNs), which holds $1,250 million of BMO issued Non-Cumulative, 5-Year Rate Reset Class B Preferred Shares, Series 48 (Non-Viability Contingent Capital (NVCC)), $750 million of BMO issued Non-Cumulative, 5-Year Rate Reset Class B Preferred Shares, Series 49 (NVCC) and $1,000 million of BMO issued Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 51 (NVCC), issued concurrently with the Series 1, Series 2 and Series 3 LRCNs, respectively. We determined that we control and therefore consolidate this vehicle as we are exposed to its variable returns and have key decision-making powers over its activities. Refer to Note 16 for further information.

We have a funding vehicle, created under the covered bond program, that was established to guarantee payments due to bondholders on bonds issued by us. We sell assets to this funding vehicle in exchange for an intercompany loan. Refer to Note 13 for further information on our covered bond deposit liabilities.

We may also use capital vehicles to transfer our credit exposure on certain loan assets. We purchase credit protection against eligible credit events from these vehicles. The vehicles collateralize their obligation through the issuance of guarantee-linked notes. Loan assets are not sold or assigned to the vehicles and remain on our Consolidated Balance Sheet. During fiscal 2021, we redeemed all guarantee-linked notes issued by these vehicles.

For those vehicles that purchase assets from us or are designed to pass on our credit risk, we have determined that, based on the rights of the arrangements or through our equity interest, we have significant exposure to the variable returns of the vehicles, and we control and therefore consolidate these vehicles. Additional information related to notes issued by, and assets sold to, these vehicles is provided in Notes 13 and 24, respectively.

*Other*

We have other consolidated structured entities, created to meet the bank's and customers' needs. Aside from the exposure resulting from our involvement as a sponsor, the bank does not have other contractual or non-contractual arrangements to provide financial support to these consolidated structured entities.

## Unconsolidated Structured Entities

The table below presents amounts related to our interests in unconsolidated SEs:

| (Canadian $ in millions) | | | 2022 | | | 2021 |
|---|---|---|---|---|---|---|
| | **Customer securitization vehicles** (1) | **Capital vehicles** | **Other securitization vehicles** | Customer securitization vehicles (1) | Capital vehicles | Other Securitization vehicles |
| **Interests recorded on our Consolidated Balance Sheet** | | | | | | |
| Financial Assets | | | | | | |
| Cash and cash equivalents | **68** | **3,483** | **–** | 63 | 1,210 | – |
| Trading securities | **573** | **–** | **1,795** | 24 | – | 58 |
| FVTPL securities | **119** | **–** | **–** | 218 | – | – |
| FVOCI securities | **1,079** | **–** | **–** | 464 | – | – |
| Amortized cost securities | **–** | **–** | **–** | – | – | 93 |
| Derivatives | **–** | **–** | **–** | 2 | – | – |
| Other | **11** | **–** | **80** | 5 | – | – |
| Total | **1,850** | **3,483** | **1,875** | 776 | 1,210 | 151 |
| Financial Liabilities | | | | | | |
| Deposits | **68** | **3,483** | **–** | 63 | 1,210 | – |
| Derivatives | **17** | **–** | **–** | – | – | – |
| Other | **–** | **48** | **–** | – | 22 | – |
| Total | **85** | **3,531** | **–** | 63 | 1,232 | – |
| **Maximum exposure to loss** (2) | **20,141** | **1** | **1,875** | 14,208 | – | 151 |
| **Total assets of the entities** | **12,364** | **3,531** | **11,845** | 8,116 | 1,234 | 5,686 |

(1) Securities held that are issued by our Canadian and U.S. customer securitization vehicles are comprised of asset-backed commercial paper and are classified as either trading securities, FVTPL securities or FVOCI securities.
(2) Maximum exposure to loss represents securities held, undrawn liquidity facilities, any remaining unfunded committed amounts to the BMO funded vehicle, derivative assets and other assets.

*Customer Securitization Vehicles*
We sponsor customer securitization vehicles (also referred to as bank-sponsored multi-seller conduits) that provide our customers with alternate sources of funding through the securitization of their assets. These vehicles provide clients with access to financing either from BMO or in the asset-backed commercial paper (ABCP) markets by allowing them to either sell their assets directly into the vehicle or indirectly by selling an interest in the securitized assets into the vehicle, which then issues ABCP to either investors or BMO to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO. We earn fees for providing services related to the securitizations, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicles. We have determined that we do not control these vehicles because either we do not service the program assets, the key relevant activity, or we do not have any exposure to variable returns.

We provide liquidity facilities to the market-funded vehicles, which may require that we provide additional financing to the vehicles should certain events occur. The total committed and undrawn amount under these liquidity facilities and undrawn amounts of the BMO funded vehicle as at October 31, 2022 was $7,114 million ($5,400 million as at October 31, 2021). This amount comprises part of the commitments outlined in Note 24.

Effective October 31, 2021, our relationship with Fairway Financial Company LLC (a customer securitization vehicle in the U.S.) changed from principal to agent as reflected primarily in the change to our exposure to variable returns. At that point, we concluded we no longer control the entity and as a result, we deconsolidated our investment. No gain or loss was recognized in our Consolidated Statement of Income as a result of deconsolidating this entity.

We continue to provide liquidity facilities to this vehicle, which may require that we provide additional financing to the vehicle in the event that certain events occur. The total committed undrawn amount under these facilities as at October 31, 2022 was $11,245 million ($8,095 million as at October 31, 2021).

Our interest in this vehicle as at October 31, 2022 and 2021 has been included in the Unconsolidated Structured Entities table above.

*Capital Vehicles*
We also use capital vehicles to pass our credit risk to security holders of the vehicles. In these situations, we are not exposed to significant default or credit risk. Our remaining exposure to variable returns is less than that of the note holders in these vehicles, who are exposed to our default and credit risk. We are not required to consolidate these vehicles.

*Other Securitization Vehicles*
Other securitization vehicles include holdings in asset-backed securitizations. Where we sponsor SEs that securitize MBS into CMOs, we may have interests through our holdings of CMOs but do not consolidate the SEs as we do not have power to direct their relevant activities. These include government-sponsored agency securities such as U.S. government agency issuances. In determining whether we are a sponsor of a SE, we consider both qualitative and quantitative factors, including the purpose and nature of the entity, and our initial and continuing involvement. Subsequent to the securitization, we sell the CMOs to third parties. Our maximum exposure to loss is limited to our on-balance sheet investments in these entities, included in the Unconsolidated Structured Entities table above.

Where the asset-backed instruments in these securitizations are transferred to third parties, but we do not substantially transfer all risks and rewards of ownership to the third-party investors, we continue to recognize the transferred assets with the related cash proceeds recorded as secured financing in our Consolidated Balance Sheet in other liabilities, securitization and structured entities' liabilities. As at October 31, 2022, these transferred assets were carried at fair value totalling $1,385 million ($53 million as at October 31, 2021) with $323 million ($nil million as at October 31, 2021) recognized in securitization and structured entities' liabilities, also carried at fair value.

Where the asset-backed instruments in these securitizations are transferred to third parties and qualify for derecognition, we record the related gains or losses in non-interest revenue, trading revenues. We may also retain an interest in the CMOs sold, which represents our continuing involvement. As at October 31, 2022, we held retained interests of $410 million ($5 million as at October 31, 2021) carried at fair value on our Consolidated Balance Sheet in securities, trading.

During the year ended October 31, 2022, we sold $8,342 million of MBS to these sponsored securitization vehicles ($2,549 million in 2021), where we divested all interests in the securitized MBSs and any gains and losses were recorded in non-interest revenue, trading revenues.

We retain residual interests in certain commercial mortgage loans that are either purchased or originated in the U.S. which are then sold and derecognized through bank sponsored SEs that securitize these loans into MBS. During the year ended October 31, 2022, we sold and derecognized $2,142 million of these loans ($411 million in 2021) and recognized a gain of $3 million upon transfer ($nil million in 2021). The carrying values of our retained interests classified as loans carried at amortized cost were $80 million as at October 31, 2022 ($nil million as at October 31, 2021). Fair value was equal to carrying value on these dates.

*BMO Managed Funds*
We have established a number of funds that we also manage. We assess whether or not we control these funds based on the economic interest we have in the funds, including investments in the funds and management fees earned from the funds, and any investors' rights to remove us as investment manager. We only consolidate those funds that we control. Our total interest in unconsolidated BMO managed funds was $948 million as at October 31, 2022 ($1,345 million as at October 31, 2021), with $185 million included in FVTPL securities and $763 million included in trading securities as at October 31, 2022 ($321 million and $1,024 million, respectively, as at October 31, 2021) in our Consolidated Balance Sheet.

### Other Structured Entities

We purchase and hold investments in a variety of third-party SEs, including exchange-traded funds, mutual funds, limited partnerships investment trusts and government-sponsored ABS vehicles, which are recorded in securities in our Consolidated Balance Sheet. We are considered to have an interest in these entities through our holdings and because we may act as a counterparty in certain derivatives contracts. We are not the investment manager or the sponsor of any of these entities. We are generally a passive investor and do not have power over the key decision-making activities of these entities. Our maximum exposure to loss from our investments is limited to the carrying amounts of our investments in these entities and any unutilized commitment we have provided.

### Sponsored Structured Entities

We may be deemed to be the sponsor of a SE if we are involved in its design, legal set-up or marketing. We may also be deemed to be the sponsor of a SE if market participants would reasonably associate the entity with us. Any interests in securitization vehicles we have sponsored are disclosed in the interests in Unconsolidated Structured Entities table above.

### Financial Support Provided to Structured Entities

During the years ended October 31, 2022 and 2021, we did not provide any financial or non-financial support to any consolidated or unconsolidated SEs when we were not contractually obligated to do so. Furthermore, we have no intention of providing such support in the future.

## Note 8: Derivative Instruments

Derivative instruments are financial contracts that derive their value from underlying changes in interest rates, foreign exchange rates or other financial or commodity prices or indices.

Derivative instruments are either regulated exchange-traded contracts or negotiated over-the-counter contracts. We use these instruments for trading purposes, as well as to manage our exposures, mainly to foreign currency and interest rate fluctuations, as part of our asset/liability management program.

### Types of Derivatives

*Swaps*

Swaps are contractual agreements between two parties to exchange a series of cash flows. The various swap agreements that we enter into are as follows:

- Interest rate swaps – counterparties generally exchange fixed and floating rate interest payments based on a notional value in a single currency.
- Cross-currency swaps – fixed rate interest payments and principal amounts are exchanged in different currencies.
- Cross-currency interest rate swaps – fixed and/or floating rate interest payments and principal amounts are exchanged in different currencies.
- Commodity swaps – counterparties generally exchange fixed and floating rate payments based on a notional value of a single commodity.
- Equity swaps – counterparties exchange the return on an equity security or a group of equity securities for the return based on a fixed or floating interest rate or the return on another equity security or group of equity securities.
- Credit default swaps – one counterparty pays the other a fee in exchange for that other counterparty agreeing to make a payment if a credit event occurs, such as bankruptcy or failure to pay.
- Total return swaps – one counterparty agrees to pay or receive from the other cash amounts based on changes in the value of a reference asset or group of assets, including any returns such as interest earned on these assets, in exchange for amounts that are based on prevailing market funding rates.

*Forwards and Futures*

Forwards and futures are contractual agreements to either buy or sell a specified amount of a currency, commodity, interest rate-sensitive financial instrument or security at a specified price and date in the future.

Forwards are customized contracts transacted in the over-the-counter market. Futures are transacted in standardized amounts on regulated exchanges and are subject to daily cash margining.

*Options*

Options are contractual agreements that convey to the purchaser the right but not the obligation to either buy or sell a specified amount of a currency, commodity, interest rate-sensitive financial instrument or security at a fixed future date or at any time within a fixed future period.

For options written by us, we receive a premium from the purchaser for accepting market risk.

For options purchased by us, we pay a premium for the right to exercise the option. Since we have no obligation to exercise the option, our primary exposure to risk is the potential credit risk if the writer of an over-the-counter contract fails to meet the terms of the contract.

Caps, collars and floors are specialized types of written and purchased options. They are contractual agreements in which the writer agrees to pay the purchaser, based on a specified notional amount, the difference between the market rate and the prescribed rate of the cap, collar or floor. The writer receives a premium for selling this instrument.

A swaption is an option granting its owner the right but not the obligation to enter into an underlying swap.

A futures option is an option contract in which the underlying instrument is a single futures contract.

The main risks associated with these derivative instruments are related to exposure to movements in interest rates, foreign exchange rates, credit quality, value of the underlying financial instrument or commodity, as applicable, and the possible inability of counterparties to meet the terms of the contracts.

## Embedded Derivatives

From time to time, we purchase or issue financial instruments containing embedded derivatives. The embedded derivative in a financial liability is separated from the host contract and carried at fair value if the economic characteristics of the derivative are not closely related to those of the host contract, the terms of the embedded derivative are the same as those of a stand-alone derivative, and the combined contract is not measured at fair value. To the extent that we cannot reliably identify and measure the embedded derivative, the entire contract is carried at fair value, with changes in fair value reflected in our Consolidated Statement of Income. Embedded derivatives in certain of our GIC deposits are accounted for separately from the host instrument and presented within deposits in our Consolidated Balance Sheet.

## Contingent Features

Certain over-the-counter derivative instruments contain provisions that link the amount of collateral we are required to post or pay to our credit ratings, as determined by the major credit rating agencies. If our credit ratings were to be downgraded, certain counterparties to these derivative instruments could demand immediate and ongoing collateralization on derivative liability positions or request immediate payment. The aggregate fair value of all derivative instruments with collateral posting requirements that were in a liability position as at October 31, 2022 was $12,413 million ($4,537 million as at October 31, 2021), for which we have posted collateral of $10,464 million ($3,921 million as at October 31, 2021).

## Risks Hedged

*Interest Rate Risk*

We manage interest rate risk through interest rate futures, interest rate swaps and options, which are linked to and adjust the interest rate sensitivity of a specific asset, liability, forecasted transaction or firm commitment, or a specific pool of transactions with similar risk characteristics.

*Foreign Currency Risk*

We manage foreign currency risk through currency futures, foreign currency options, cross-currency swaps, foreign exchange spot transactions, forward contracts and deposits denominated in foreign currencies.

*Equity Price Risk*

We manage equity price risk through total return swaps.

## Trading Derivatives

Trading derivatives include derivatives entered into with customers to accommodate their risk management needs, market-making to facilitate customer-driven demand for derivatives, derivatives transacted on a limited basis to generate trading income from our principal trading positions, and certain derivatives that we enter into as part of our risk management strategy that do not qualify as hedges for accounting purposes (economic hedges).

We structure and market derivative products to enable customers to transfer, modify or reduce current or expected exposure to risks.

Principal trading activities include market-making and positioning activities. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenues based on spread and volume. Positioning activities involve managing market risk positions with the expectation of profiting from favourable movements in prices, rates or indices.

We may also economically hedge a portion of our U.S. dollar earnings through forward foreign exchange contracts and/or options to minimize fluctuations in our consolidated net income due to the translation of our U.S. dollar earnings. These contracts are recorded at fair value, with changes in fair value recorded in non-interest revenue, trading revenues, in our Consolidated Statement of Income. We entered into economic hedges in relation to the announced definitive agreement with BNP Paribas to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.

Trading derivatives are recorded at fair value. Realized and unrealized gains and losses are generally recorded in non-interest revenue, trading revenues, in our Consolidated Statement of Income. Unrealized gains and losses on derivatives used to economically hedge certain exposures may be recorded in the Consolidated Statement of Income in the same line as the unrealized gains and losses arising from the exposures. Unrealized gains on trading derivatives are recorded as derivative instrument assets and unrealized losses are recorded as derivative instrument liabilities in our Consolidated Balance Sheet.

## Fair Value of Trading and Hedging Derivatives

Fair value represents point-in-time estimates that may change in subsequent reporting periods due to market conditions or other factors. A discussion of the fair value measurement of derivatives is included in Note 17.

Fair values of our derivative instruments are as follows:

| (Canadian $ in millions) | | | 2022 | | | 2021 |
|---|---|---|---|---|---|---|
| | **Gross assets** | **Gross liabilities** | **Net** | Gross assets | Gross liabilities | Net |
| **Trading** | | | | | | |
| **Interest Rate Contracts** | | | | | | |
| Swaps (1) | **7,176** | **(4,249)** | **2,927** | 6,132 | (4,323) | 1,809 |
| Forward rate agreements | **437** | **(120)** | **317** | 42 | (105) | (63) |
| Purchased options | **3,157** | **–** | **3,157** | 641 | – | 641 |
| Written options | **–** | **(2,391)** | **(2,391)** | – | (520) | (520) |
| Futures | **16** | **(27)** | **(11)** | – | (3) | (3) |
| **Foreign Exchange Contracts** (2) | | | | | | |
| Cross-currency swaps | **1,688** | **(2,096)** | **(408)** | 1,438 | (1,207) | 231 |
| Cross-currency interest rate swaps | **10,722** | **(11,254)** | **(532)** | 8,595 | (5,827) | 2,768 |
| Forward foreign exchange contracts | **8,387** | **(7,267)** | **1,120** | 3,505 | (3,925) | (420) |
| Purchased options | **1,096** | **–** | **1,096** | 381 | – | 381 |
| Written options | **–** | **(1,151)** | **(1,151)** | – | (384) | (384) |
| **Commodity Contracts** | | | | | | |
| Swaps | **4,198** | **(1,725)** | **2,473** | 5,916 | (1,256) | 4,660 |
| Purchased options | **1,851** | **–** | **1,851** | 1,383 | – | 1,383 |
| Written options | **–** | **(1,627)** | **(1,627)** | – | (815) | (815) |
| Futures | **275** | **(237)** | **38** | 319 | (120) | 199 |
| **Equity Contracts** | **6,473** | **(14,584)** | **(8,111)** | 5,998 | (9,383) | (3,385) |
| **Credit Contracts** | | | | | | |
| Purchased | **27** | **(3)** | **24** | – | (3) | (3) |
| Written | **34** | **(72)** | **(38)** | – | (4) | (4) |
| Total fair value – trading derivatives | **45,537** | **(46,803)** | **(1,266)** | 34,350 | (27,875) | 6,475 |
| **Hedging** | | | | | | |
| **Interest Rate Contracts** (3) | | | | | | |
| Cash flow hedges – swaps | **41** | **(6,824)** | **(6,783)** | 354 | (1,166) | (812) |
| Fair value hedges – swaps | **1,935** | **(2,987)** | **(1,052)** | 903 | (662) | 241 |
| Total swaps | **1,976** | **(9,811)** | **(7,835)** | 1,257 | (1,828) | (571) |
| **Foreign Exchange Contracts** (4) | | | | | | |
| Cash flow hedges (1) | **629** | **(3,342)** | **(2,713)** | 1,020 | (1,112) | (92) |
| Net investment hedges | **–** | **–** | **–** | 46 | – | 46 |
| Total foreign exchange contracts | **629** | **(3,342)** | **(2,713)** | 1,066 | (1,112) | (46) |
| **Equity Contracts** | | | | | | |
| Cash flow hedges | **18** | **–** | **18** | 40 | – | 40 |
| Total equity contracts | **18** | **–** | **18** | 40 | – | 40 |
| Total fair value – hedging derivatives (5) | **2,623** | **(13,153)** | **(10,530)** | 2,363 | (2,940) | (577) |
| Total fair value – trading and hedging derivatives | **48,160** | **(59,956)** | **(11,796)** | 36,713 | (30,815) | 5,898 |
| Less: impact of master netting agreements | **(31,878)** | **31,878** | **–** | (20,952) | 20,952 | – |
| Total | **16,282** | **(28,078)** | **(11,796)** | 15,761 | (9,863) | 5,898 |

(1) Includes derivatives entered into in relation to our announced agreement to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.
(2) Gold contracts are included in foreign exchange contracts.
(3) Includes the fair value of bond futures in fair value hedges rounded down to $nil million as at October 31, 2022 (we held no bond futures as at October 31, 2021).
(4) Includes the fair value of USD-EUR cross-currency swaps in fair value hedges rounded down to $nil million as at October 31, 2022 (we held no USD-EUR cross-currency swaps as at October 31, 2021).
(5) The fair values of hedging derivatives wholly or partially offset the changes in fair values of the related on-balance sheet financial instruments.

Assets are shown net of liabilities to customers where we have a legally enforceable right to offset amounts and we intend to settle contracts on a net basis.

## Notional Amounts of Trading Derivatives

The notional amounts of our derivatives represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.

| (Canadian $ in millions) | | | 2022 | | | 2021 |
|---|---|---|---|---|---|---|
| | **Exchange traded** | **Over-the-counter** | **Total** | Exchange traded | Over-the-counter | Total |
| **Interest Rate Contracts** | | | | | | |
| Swaps (1) | **–** | **5,683,145** | **5,683,145** | – | 3,976,428 | 3,976,428 |
| Forward rate agreements | **–** | **22,397** | **22,397** | – | 147,657 | 147,657 |
| Purchased options | **23,854** | **98,113** | **121,967** | 10,611 | 69,491 | 80,102 |
| Written options | **11,073** | **87,941** | **99,014** | 3,621 | 68,155 | 71,776 |
| Futures | **401,965** | **–** | **401,965** | 232,972 | – | 232,972 |
| Total interest rate contracts | **436,892** | **5,891,596** | **6,328,488** | 247,204 | 4,261,731 | 4,508,935 |
| **Foreign Exchange Contracts** (2) | | | | | | |
| Cross-currency swaps | **–** | **53,837** | **53,837** | – | 45,482 | 45,482 |
| Cross-currency interest rate swaps | **–** | **578,685** | **578,685** | – | 506,791 | 506,791 |
| Forward foreign exchange contracts | **–** | **481,773** | **481,773** | – | 489,081 | 489,081 |
| Purchased options | **1,127** | **72,733** | **73,860** | 1,762 | 54,145 | 55,907 |
| Written options | **5,421** | **74,041** | **79,462** | 4,735 | 54,147 | 58,882 |
| Futures | **1,032** | **–** | **1,032** | 222 | – | 222 |
| Total foreign exchange contracts | **7,580** | **1,261,069** | **1,268,649** | 6,719 | 1,149,646 | 1,156,365 |
| **Commodity Contracts** | | | | | | |
| Swaps | **–** | **24,525** | **24,525** | – | 28,892 | 28,892 |
| Purchased options | **34,177** | **5,686** | **39,863** | 10,020 | 4,526 | 14,546 |
| Written options | **34,245** | **5,011** | **39,256** | 11,000 | 3,132 | 14,132 |
| Futures | **44,836** | **–** | **44,836** | 39,448 | – | 39,448 |
| Total commodity contracts | **113,258** | **35,222** | **148,480** | 60,468 | 36,550 | 97,018 |
| **Equity Contracts** | **162,102** | **104,825** | **266,927** | 106,302 | 98,962 | 205,264 |
| **Credit Contracts** | | | | | | |
| Purchased | **–** | **16,771** | **16,771** | – | 12,358 | 12,358 |
| Written | **–** | **11,099** | **11,099** | – | 5,158 | 5,158 |
| Total | **719,832** | **7,320,582** | **8,040,414** | 420,693 | 5,564,405 | 5,985,098 |

(1) Includes derivatives entered into in relation to our announced agreement to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.
(2) Gold contracts are included with foreign exchange contracts.

Table excludes loan commitment derivatives with notionals of $4,183 million ($5,613 million as at October 31, 2021).

## Derivatives Used in Hedge Accounting

The bank applies the requirements of IAS 39 *Financial Instruments: Recognition and Measurement* for hedge accounting purposes. In accordance with our risk management strategy, we enter into various derivative contracts to hedge our interest rate, foreign currency and equity price exposures. We also use deposits, cross-currency swaps, foreign exchange forwards and options to hedge foreign currency exposure in our net investment in foreign operations.

When the hedged item is accounted for at FVTPL, there is a natural offset within the income statement with the related derivative. However, when we manage risks incumbent in instruments that are accounted for at amortized cost, including loans and deposits, or FVOCI debt securities, we use hedge accounting in order to eliminate the mismatch between the hedged item and the mark-to-market derivative.

To the extent these instruments used to manage risk qualify for hedge accounting, we designate them in accounting hedge relationships. Our structural market risk strategies, including our approach to managing interest rate and foreign exchange risk, are included in the blue-tinted font in the Structural (Non-Trading) Market Risk section of Management's Discussion and Analysis within this report. In addition, our exposure to foreign exchange rate risk is discussed in the Non-Trading Foreign Exchange Risk section of Management's Discussion and Analysis. Our exposure to equity price risk and our approach to managing it are discussed in the Other Share-Based Compensation, Mid-Term Incentive Plans section of Note 20.

By using derivatives to hedge exposures to changes in interest rates, foreign currency exchange rates, and equity prices, we are also exposed to the credit risk of the derivative counterparty. We mitigate credit risk by entering into transactions with high-quality counterparties, requiring the counterparties to post collateral, entering into master netting agreements, or settling through centrally cleared counterparties.

In order to qualify as an accounting hedge, the hedging relationship must be designated and formally documented at its inception, detailing the particular risk management objective and strategy for the hedge and the specific asset, liability or cash flow being hedged, as well as how effectiveness is to be assessed. Changes in the fair value of the derivative must be highly effective in offsetting changes in the fair value or changes in the amount of future cash flows of the hedged item. We evaluate hedge effectiveness at the inception of the hedging relationship and on an ongoing basis, retrospectively and prospectively, primarily using a quantitative statistical regression analysis. We consider a hedging relationship highly effective when all of the following criteria are met: correlation between the variables in the regression is at least 0.8; the slope of the regression is within a 0.8 to 1.25 range; and the confidence level of the slope is at least 95%. The practice is different for our net investment hedge, which is discussed in the Net Investment Hedges section below.

Any ineffectiveness in the hedging relationship is recognized as it arises in non-interest revenue, other, in our Consolidated Statement of Income.

Under the IASB's Phase 1 Amendments to IAS 39 and IFRS 7, certain hedge accounting requirements were modified to provide relief from the uncertainty arising from IBOR reform during the period prior to replacement of IBORs. These amendments include allowing us to assume the interest rate benchmarks that are the basis for cash flows of the hedged item and hedging instrument are not altered as a result of IBOR reform, thereby allowing hedge accounting to continue. They also provide an exception from the requirement to discontinue hedge accounting if a hedging relationship does not meet the effectiveness requirements solely as a result of IBOR reform. We continue to apply these amendments as at October 31, 2022, with application ending at the earlier of the discontinuation of the impacted hedge relationship and when there is no longer uncertainty arising from IBOR reform over the timing and amount of IBOR-based cash flows.

The following table outlines the notional amounts, and average rates of derivatives and the carrying amounts of deposits designated as hedging instruments, by term to maturity, hedge type, and risk type, where applicable.

| | | Remaining term to maturity | | | | | 2022 | 2021 |
|---|---|---|---|---|---|---|---|---|
| (Canadian $ in millions, except as noted) | | Within 1 year | 1 to 3 years | 3 to 5 years | 5 to 10 years | Over 10 years | Total | Total |
| **Cash Flow Hedges** | | | | | | | | |
| **Interest rate risk – Interest rate swaps** | | | | | | | | |
| Notional amount (1) | | **54,197** | **29,562** | **41,475** | **41,028** | **1,683** | **167,945** | 94,152 |
| Average fixed interest rate | | **3.87%** | **3.37%** | **2.30%** | **2.56%** | **2.42%** | **3.06%** | 1.06% |
| **Foreign exchange risk – Cross-currency swaps and foreign exchange forwards** (2) | | | | | | | | |
| CAD-USD pair (3) | Notional amount | **33,018** | **12,436** | **9,943** | **6,979** | **327** | **62,703** | 38,292 |
| | Average fixed interest rate | **0.60%** | **2.10%** | **2.45%** | **1.58%** | **3.42%** | **1.31%** | 1.91% |
| | Average exchange rate: CAD-USD | **1.3329** | **1.3076** | **1.2757** | **1.3407** | **1.3076** | **1.3196** | 1.3137 |
| CAD-EUR pair | Notional amount | **6,710** | **1,924** | **8,756** | **1,839** | **200** | **19,429** | 14,517 |
| | Average fixed interest rate | **1.76%** | **2.41%** | **3.12%** | **1.89%** | **2.97%** | **2.47%** | 2.10% |
| | Average exchange rate: CAD-EUR | **1.4919** | **1.5395** | **1.3904** | **1.4711** | **1.4870** | **1.4489** | 1.5078 |
| Other currency pairs (4) | Notional amount (5) | **1,801** | **2,077** | **3,621** | **143** | **76** | **7,718** | 10,055 |
| | Average fixed interest rate | **3.15%** | **2.35%** | **1.96%** | **4.33%** | **5.24%** | **2.42%** | 2.39% |
| | Average exchange rate: CAD-Non USD/EUR | **1.0536** | **1.2744** | **1.6947** | **0.1500** | **0.9038** | **1.3956** | 1.4606 |
| **Equity price risk – Total return swap** (6) | | | | | | | | |
| Notional amount | | **–** | **455** | **–** | **–** | **–** | **455** | 515 |
| **Fair Value Hedges** | | | | | | | | |
| **Interest rate risk – Interest rate swaps** | | | | | | | | |
| Notional amount (7) | | **31,073** | **31,604** | **24,011** | **14,692** | **2,291** | **103,671** | 80,711 |
| Average fixed interest rate | | **2.85%** | **2.01%** | **2.28%** | **2.56%** | **2.90%** | **2.42%** | 1.21% |
| **Interest rate risk – Bond futures (exchange-traded derivatives)** | | | | | | | | |
| Notional amount | | **109** | **–** | **–** | **–** | **–** | **109** | – |
| Average price in dollars | | **104** | **–** | **–** | **–** | **–** | **104** | – |
| **Foreign exchange risk – Cross-currency swaps** | | | | | | | | |
| USD-EUR pair | Notional amount (8) | **–** | **19** | **–** | **–** | **–** | **19** | – |
| | Average fixed interest rate | **–** | **3.25%** | **–** | **–** | **–** | **3.25%** | – |
| | Average exchange rate: USD-EUR | **–** | **0.9706** | **–** | **–** | **–** | **0.9706** | – |
| **Net Investment Hedges** | | | | | | | | |
| **Foreign exchange risk – Cross-currency swaps and foreign exchange forwards** | | | | | | | | |
| CAD-GBP pair | Notional amount | **–** | **–** | **–** | **–** | **–** | **–** | 1,285 |
| **Foreign exchange risk – Deposit liabilities** | | | | | | | | |
| USD denominated deposit – carrying amount | | **1,251** | **–** | **–** | **–** | **–** | **1,251** | 5,964 |
| GBP denominated deposit – carrying amount | | **–** | **–** | **–** | **–** | **–** | **–** | 728 |

(1) The notional amount of the interest rate swaps likely subject to IBOR reform was $22,689 million of USD LIBOR maturing after June 30, 2023 and $49,560 million of CDOR maturing after June 28, 2024, as at October 31, 2022. We had a notional amount of $35,519 million as at October 31, 2021, likely subject to USD IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments.

(2) Under certain hedge strategies using cross-currency swaps, a CAD leg is inserted to create two swaps designated as separate hedges (for example, a EURO-USD cross-currency swap split into EURO-CAD and CAD-USD cross-currency swaps). The relevant notional amount is grossed up in this table, as the cross-currency swaps are disclosed by CAD-foreign currency pair.

(3) Includes derivatives entered into in relation to our announced agreement to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.

(4) Includes CAD-AUD, CAD-CHF, CAD-CNH, CAD-GBP, CAD-HKD, CAD-JPY, or CAD-NOK cross-currency swaps where applicable. The notional amount of the cross-currency swaps likely subject to IBOR reform was $nil million of USD LIBOR maturing after June 30, 2023 and $nil million of CDOR maturing after June 28, 2024 as at October 31, 2022. We had a notional amount of $nil million of USD LIBOR as at October 31, 2021, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments.

(5) The notional amount of the cross-currency swaps likely subject to IBOR reform that mature after December 31, 2021 was $nil million of GBP LIBOR as at October 31, 2022 ($718 million as at October 31, 2021).

(6) The notional amount of the total return swaps likely subject to IBOR reform that mature after June 28, 2024 was $455 million of CDOR as at October 31, 2022.

(7) The notional amount of the interest rate swaps likely subject to IBOR reform was $31,455 million of USD LIBOR maturing after June 30, 2023 and $21,043 million of CDOR maturing after June 28, 2024 as at October 31, 2022. We had a notional amount of $43,642 million of USD LIBOR as at October 31, 2021, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments. The notional amount of GBP LIBOR interest rate swaps that mature after December 31, 2021 was $nil million as at October 31, 2022 ($nil million as at October 31, 2021).

(8) The notional amount of the cross-currency swaps likely subject to IBOR reform was $nil million of USD LIBOR maturing after June 30, 2023 and $nil million of CDOR maturing after June 28, 2024 as at October 31, 2022. We had a notional amount of $nil million of USD LIBOR as at October 31, 2021, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments.

*Cash Flow Hedges*

Cash flow hedges modify exposure to variability in cash flows for variable interest rate bearing instruments, foreign currency denominated assets and liabilities and certain cash-settled share-based payment grants subject to equity price risk. We use interest rate swaps with or without embedded options, cross-currency swaps, forwards and total return swaps to hedge this variability. We hedge the full amount of foreign exchange risk, but interest rate risk is hedged only to the extent of benchmark interest rates. The benchmark interest rate is a component of interest rate risk that is observable in the relevant financial markets, for example LIBOR, bankers' acceptance (BA) rates or Secured Overnight Financing Rate (SOFR).

We determine the amount of the exposure to which hedge accounting is applied by assessing the potential impact of changes in interest rates, foreign exchange rates, and equity prices on the future cash flows of floating rate loans and deposits, foreign currency denominated assets and liabilities and certain cash-settled share-based payments. This assessment is performed using analytical techniques, such as simulation, sensitivity analysis, stress testing and gap analysis.

We record interest that we pay or receive on these cash flow hedge derivatives as an adjustment to net interest income in our Consolidated Statement of Income over the life of the hedge.

We entered into forward contracts, to hedge variability in the fixed cash USD purchase price we will pay BNP Paribas to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.

The accounting mismatch that would otherwise occur is eliminated by recording changes in the fair value of the derivative that offset changes in the fair value of the hedged item for the designated hedged risk in other comprehensive income. Hedge ineffectiveness, the portion of the change in fair value of the derivative that does not offset changes in the fair value of the hedged item, is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income as it arises.

For cash flow hedges that are discontinued before the end of the original hedge term, the cumulative unrealized gain or loss recorded in other comprehensive income is amortized to our Consolidated Statement of Income in net interest income for interest rate swaps and in employee compensation for total return swaps as the hedged item is recorded in earnings. If the hedged item is sold or settled, the entire unrealized gain or loss is recognized immediately in net interest income in our Consolidated Statement of Income. In general, we do not terminate our foreign exchange hedges before maturity.

For cash flow hedges, we use a hypothetical derivative to measure the hedged risk of floating rate loans, deposits, foreign currency denominated assets and liabilities, or share-based payment grants. This hypothetical derivative matches the critical terms of the hedged items identically, and it perfectly offsets the hedged cash flow.

In our cash flow hedge relationships, the main sources of ineffectiveness are differences in interest rate indices, tenor and reset/settlement frequencies between the hedging instrument and the hedged item.

*Net Investment Hedges*

Net investment hedges mitigate our exposure to foreign currency exchange rate fluctuations related to our net investment in foreign operations.

Deposits denominated in foreign currencies, cross-currency swaps, foreign exchange forwards and options are designated as a hedging instrument for a portion of the net investment in foreign operations. We designate the spot rate component of our hedging instrument in net investment hedges. The foreign currency translation of our net investment in foreign operations and the effective portion of the corresponding hedging instrument are recorded in unrealized gains (losses) on translation of net foreign operations in other comprehensive income, instead of through the income statement in the case of the hedging instrument if hedge accounting had not been elected.

The effectiveness of our net investment hedge is determined using the dollar offset method with spot foreign currency rates. As the notional amount of the hedging instruments and the hedged net investment in foreign operations are the same, there is no source of ineffectiveness in these hedging relationships.

For cash flow hedges and net investment hedges, the following table contains information related to items designated as hedging instruments, hedged items and hedge ineffectiveness for the years ended October 31, 2022 and October 31, 2021.

| (Canadian $ in millions) | | | | | 2022 |
|---|---|---|---|---|---|
| | Carrying amount of hedging instruments (1) | | Hedge ineffectiveness | | |
| | Asset | Liability | Gains (losses) on hedging derivatives used to calculate hedge ineffectiveness (2) | Gains (losses) on hypothetical derivatives used to calculate hedge ineffectiveness (2) | Ineffectiveness recorded in non-interest revenue – other |
| **Cash Flow Hedges** | | | | | |
| Interest rate risk – Interest rate swaps | **41** | **(6,824)** | **(8,481)** | **8,588** | **(33)** |
| Foreign exchange risk – Cross-currency swaps, foreign exchange forwards and options (3) | **629** | **(3,342)** | **1,684** | **(1,684)** | **–** |
| Equity price risk – Total return swaps | **18** | **–** | **(29)** | **29** | **–** |
| | **688** | **(10,166)** | **(6,826)** | **6,933** | **(33)** |
| **Net Investment Hedges** | | | | | |
| Foreign exchange risk – Cross-currency swaps, foreign exchange forwards and options | **–** | **–** | **429** | **(429)** | **–** |
| Foreign exchange risk – Deposit liabilities | **–** | **(1,251)** | **(886)** | **886** | **–** |
| Total | **688** | **(11,417)** | **(7,283)** | **7,390** | **(33)** |

| | | | | | 2021 |
|---|---|---|---|---|---|
| **Cash Flow Hedges** | | | | | |
| Interest rate risk – Interest rate swaps | 354 | (1,166) | (2,467) | 2,447 | (5) |
| Foreign exchange risk – Cross-currency swaps, foreign exchange forwards and options | 1,020 | (1,112) | 276 | (276) | – |
| Equity price risk – Total return swaps | 40 | – | 313 | (313) | – |
| | 1,414 | (2,278) | (1,878) | 1,858 | (5) |
| **Net Investment Hedges** | | | | | |
| Foreign exchange risk – Cross-currency swaps, foreign exchange forwards and options | 46 | – | 29 | (29) | – |
| Foreign exchange risk – Deposit liabilities | – | (6,692) | 647 | (647) | – |
| Total | 1,460 | (8,970) | (1,202) | 1,182 | (5) |

(1) Represents unrealized gains (losses) recorded as part of the derivative instruments in assets and liabilities, respectively, in our Consolidated Balance Sheet.
(2) Represents life to date amounts.
(3) Includes derivatives entered into in relation to our announced agreement to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.

The following tables provide a reconciliation related to the impacts of our cash flow hedges and net investment hedges in our Consolidated Statement of Other Comprehensive Income, on a pre-tax basis for the years ended October 31, 2022 and October 31, 2021.

| (Canadian $ in millions) | | | | | | 2022 |
|---|---|---|---|---|---|---|
| | | | | | Balance in cash flow hedge AOCI / net foreign operations AOCI | |
| | Balance October 31, 2021 | Gains / (losses) recognized in OCI | Amount reclassified to net income as the hedged item affects net income | Balance October 31, 2022 (1)(2) | Active hedges | Discontinued hedges |
| **Cash Flow Hedges** | | | | | | |
| Interest rate risk | 578 | **(8,448)** | **(334)** | **(8,204)** | **(6,713)** | **(1,491)** |
| Foreign exchange risk (3) | (483) | **1,684** | **22** | **1,223** | **1,168** | **55** |
| Equity price risk | 179 | **(29)** | **(117)** | **33** | **33** | **–** |
| | 274 | **(6,793)** | **(429)** | **(6,948)** | **(5,512)** | **(1,436)** |
| **Net Investment Hedges** | | | | | | |
| Foreign exchange risk | (1,263) | **(457)** | **(3)** | **(1,723)** | **(1,723)** | **–** |
| Total | (989) | **(7,250)** | **(432)** | **(8,671)** | **(7,235)** | **(1,436)** |

| | | | | | | 2021 |
|---|---|---|---|---|---|---|
| | | | | | Balance in cash flow hedge AOCI / net foreign operations AOCI | |
| | Balance October 31, 2020 | Gains / (losses) recognized in OCI | Amount reclassified to net income as the hedged item affects net income | Balance October 31, 2021 (1)(2) | Active hedges | Discontinued hedges |
| **Cash Flow Hedges** | | | | | | |
| Interest rate risk | 3,529 | (2,462) | (489) | 578 | (921) | 1,499 |
| Foreign exchange risk | (759) | 266 | 10 | (483) | (483) | – |
| Equity price risk | (50) | 313 | (84) | 179 | 179 | – |
| | 2,720 | (1,883) | (563) | 274 | (1,225) | 1,499 |
| **Net Investment Hedges** | | | | | | |
| Foreign exchange risk | (1,939) | 676 | – | (1,263) | (1,263) | – |
| Total | 781 | (1,207) | (563) | (989) | (2,488) | 1,499 |

(1) Tax balance related to cash flow hedges accumulated other comprehensive income was $1,819 million as at October 31, 2022 ($(89) million as at October 31, 2021).
(2) Tax balance related to net investment hedges accumulated other comprehensive income was $466 million as at October 31, 2022 ($341 million as at October 31, 2021).
(3) Includes derivatives entered into in relation to our announced agreement to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.

*Fair Value Hedges*

Fair value hedges modify exposure to changes in a fixed rate instrument's fair value caused by changes in interest rates. These hedges economically convert fixed rate assets and liabilities to floating rate. We use cross-currency swaps, interest rate swaps and bond futures to hedge foreign exchange risk and interest rate risk, including benchmark interest rates, inherent in fixed rate securities, a portfolio of mortgages, deposits and subordinated debt and other liabilities.

The carrying value of fixed rate assets or liabilities that are part of a hedging relationship is adjusted for the change in value of the risk being hedged. To the extent that the change in the fair value of the derivative does not offset changes in the fair value of the hedged item for the risk being hedged, the net amount (hedge ineffectiveness) is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income.

For fair value hedges that are discontinued, we cease adjusting the hedged item. The cumulative fair value adjustment of the hedged item is then amortized to net interest income over the hedged item's remaining term to maturity. If the hedged item is sold or settled, the cumulative fair value adjustment is included in the gain or loss on sale or settlement.

In our fair value hedge relationships, the main sources of ineffectiveness are our own credit risk on the fair value of the swap, and the difference in terms such as fixed interest rate or reset/settlement frequency between the swap and the hedged item.

The amounts related to derivatives designated as fair value hedging instruments, hedged items and hedge ineffectiveness for the years ended October 31, 2022 and 2021 are as follows:

| (Canadian $ in millions) | | | | | | | | 2022 |
|---|---|---|---|---|---|---|---|---|
| | Carrying amount of hedging derivatives (1) | | Hedge ineffectiveness | | | | Accumulated amount of fair value hedge gains (losses) on hedged items | |
| | Asset | Liability | Gains (losses) on hedging derivatives used to calculate hedge ineffectiveness | Gains (losses) on hedged item used to calculate hedge ineffectiveness | Ineffectiveness recorded in non-interest revenue – other | Carrying amount of the hedged item (2) | Active hedges | Discontinued hedges |
| **Fair Value Hedge** (3) | | | | | | | | |
| Interest rate swaps | **1,935** | **(2,987)** | **–** | **–** | **–** | **–** | **–** | **–** |
| Securities and loans | **–** | **–** | **2,633** | **(2,625)** | **8** | **36,394** | **(2,603)** | **122** |
| Deposits, subordinated debt and other liabilities | **–** | **–** | **(3,113)** | **3,128** | **15** | **(61,307)** | **2,841** | **425** |
| Total | **1,935** | **(2,987)** | **(480)** | **503** | **23** | **(24,913)** | **238** | **547** |
| | | | | | | | | 2021 |
| **Fair Value Hedge** (3) | | | | | | | | |
| Interest rate swaps | 903 | (662) | – | – | – | – | – | – |
| Securities and loans | – | – | 1,649 | (1,654) | (5) | 49,789 | 156 | 62 |
| Deposits, subordinated debt and other liabilities | – | – | (644) | 638 | (6) | (31,530) | (121) | (91) |
| Total | 903 | (662) | 1,005 | (1,016) | (11) | 18,259 | 35 | (29) |

(1) Represents the unrealized gains (losses) within derivative instruments in assets and liabilities, respectively, in the Consolidated Balance Sheet.

(2) Represents the carrying value in the Consolidated Balance Sheet and includes amortized cost, before allowance for credit losses, plus fair value hedge adjustments, except for FVOCI securities that are carried at fair value.

(3) Includes the fair value of USD-EUR cross-currency swaps and bond futures rounded down to $nil million as at October 31, 2022 (we held no USD-EUR cross-currency swaps and bond futures as at October 31, 2021).

## Derivative-Related Market Risk

Derivative instruments are subject to market risk. Market risk arises from the potential for a negative impact on the balance sheet and/or statement of income due to adverse changes in the value of derivative instruments as a result of changes in certain market variables. These variables include interest rates, credit spreads, foreign exchange rates, equity and commodity prices and their implied volatilities, credit migration and default. We strive to limit market risk by employing comprehensive governance and management processes for all market risk-taking activities.

## Derivative-Related Credit Risk

Derivative instruments are subject to credit risk arising from the possibility that counterparties may default on their obligations. The credit risk associated with a derivative is normally a small fraction of the notional amount of the derivative instrument. Derivative contracts generally expose us to potential credit loss if changes in market rates affect the counterparty's position unfavourably and the counterparty defaults on payment. The credit risk is represented by the positive fair value of the derivative instrument. We strive to limit credit risk by dealing with counterparties that we believe are creditworthy, and we manage our credit risk for derivatives using the same credit risk process that is applied to loans and other credit assets.

We also pursue opportunities to reduce our exposure to credit losses on derivative instruments, by securing collateral and by entering into master netting agreements with counterparties. The credit risk associated with favourable contracts is mitigated by legally enforceable master netting agreements to the extent that unfavourable contracts with the same counterparty must be settled concurrently with favourable contracts.

Exchange-traded derivatives have limited potential for credit risk exposure, as they are settled net daily with each exchange.

Terms used in the credit risk tables below are as follows:

**Replacement cost** captures the loss that would occur if a counterparty were to default in the present or at a future time, assuming that the closeout and replacement of transactions occur instantaneously, and assuming no recovery on the value of those transactions in bankruptcy.

**Credit risk equivalent** represents the total replacement cost plus an amount representing the potential future credit exposure adjusted by a multiplier of 1.4, as outlined in OSFI's Capital Adequacy Requirements (CAR) Guideline.

**Risk-weighted assets** represent the credit risk equivalent, weighted on the basis of the creditworthiness of the counterparty, and considering collateral, netting and other credit risk mitigants, as prescribed by OSFI.

| (Canadian $ in millions) | | | **2022** | | | 2021 |
|---|---|---|---|---|---|---|
| | **Replacement cost** (1) | **Credit risk equivalent** (1) | **Risk-weighted assets** | Replacement cost (1) | Credit risk equivalent (1) | Risk-weighted assets |
| **Interest Rate Contracts** | | | | | | |
| **Over-the-counter** | | | | | | |
| Swaps | **4,133** | **8,718** | **764** | 2,636 | 6,936 | 1,422 |
| Forward rate agreements | **943** | **1,773** | **430** | 667 | 2,545 | 826 |
| Purchased options | **48** | **170** | **46** | 16 | 72 | 81 |
| Written options | **4** | **131** | **67** | 20 | 105 | 70 |
| | **5,128** | **10,792** | **1,307** | 3,339 | 9,658 | 2,399 |
| **Exchange traded** | | | | | | |
| Futures | **231** | **359** | **7** | 71 | 141 | 3 |
| Purchased options | **159** | **227** | **5** | 2 | 4 | – |
| Written options | **7** | **11** | **–** | 2 | 4 | – |
| | **397** | **597** | **12** | 75 | 149 | 3 |
| Total interest rate contracts | **5,525** | **11,389** | **1,319** | 3,414 | 9,807 | 2,402 |
| **Foreign Exchange Contracts** (2) | | | | | | |
| **Over-the-counter** | | | | | | |
| Swaps | **1,645** | **5,535** | **880** | 1,087 | 4,609 | 987 |
| Forward foreign exchange contracts | **2,250** | **8,339** | **1,237** | 769 | 6,649 | 883 |
| Purchased options | **321** | **681** | **183** | 93 | 270 | 104 |
| Written options | **2** | **88** | **30** | 11 | 115 | 38 |
| | **4,218** | **14,643** | **2,330** | 1,960 | 11,643 | 2,012 |
| **Exchange traded** | | | | | | |
| Futures | **–** | **2** | **–** | 1 | 2 | – |
| Purchased options | **–** | **2** | **–** | 15 | 22 | – |
| Written options | **7** | **10** | **–** | 26 | 37 | 1 |
| | **7** | **14** | **–** | 42 | 61 | 1 |
| Total foreign exchange contracts | **4,225** | **14,657** | **2,330** | 2,002 | 11,704 | 2,013 |
| **Commodity Contracts** | | | | | | |
| **Over-the-counter** | | | | | | |
| Swaps | **3,160** | **6,107** | **1,281** | 4,357 | 8,183 | 2,148 |
| Purchased options | **435** | **936** | **194** | 1,537 | 2,601 | 457 |
| Written options | **126** | **403** | **107** | 6 | 175 | 51 |
| | **3,721** | **7,446** | **1,582** | 5,900 | 10,959 | 2,656 |
| **Exchange traded** | | | | | | |
| Futures | **1,122** | **2,055** | **41** | 1,829 | 3,244 | 65 |
| Purchased options | **356** | **552** | **11** | 474 | 721 | 14 |
| Written options | **303** | **471** | **9** | 463 | 727 | 15 |
| | **1,781** | **3,078** | **61** | 2,766 | 4,692 | 94 |
| Total commodity contracts | **5,502** | **10,524** | **1,643** | 8,666 | 15,651 | 2,750 |
| **Equity Contracts** | | | | | | |
| Over-the-counter | **582** | **9,076** | **2,406** | 467 | 9,754 | 2,663 |
| Exchange traded | **1,580** | **3,888** | **78** | 3,873 | 7,938 | 159 |
| Total equity contracts | **2,162** | **12,964** | **2,484** | 4,340 | 17,692 | 2,822 |
| **Credit Contracts** | **97** | **562** | **103** | 277 | 721 | 79 |
| Total | **17,511** | **50,096** | **7,879** | 18,699 | 55,575 | 10,066 |

(1) Replacement cost and credit risk equivalent are presented after the impact of master netting agreements and calculated using the Standardized Approach Counterparty Credit Risk (SA-CCR) in accordance with the Capital Adequacy Requirements (CAR) Guideline issued by OSFI. The table therefore excludes loan commitment derivatives.

(2) Gold contracts are included in foreign exchange contracts.

## Term to Maturity

Our derivative contracts have varying maturity dates. The remaining contractual terms to maturity for the notional amounts of our derivative contracts are set out below:

| (Canadian $ in millions) | | | Term to maturity | | | 2022 | 2021 |
|---|---|---|---|---|---|---|---|
| | Within 1 year | 1 to 3 years | 3 to 5 years | 5 to 10 years | Over 10 years | Total notional amounts | Total notional amounts |
| **Interest Rate Contracts** | | | | | | | |
| Swaps (1) | **2,458,155** | **1,520,032** | **829,127** | **878,514** | **268,933** | **5,954,761** | 4,151,291 |
| Forward rate agreements, futures and options | **418,903** | **166,623** | **37,057** | **19,511** | **3,358** | **645,452** | 532,507 |
| Total interest rate contracts | **2,877,058** | **1,686,655** | **866,184** | **898,025** | **272,291** | **6,600,213** | 4,683,798 |
| **Foreign Exchange Contracts** (2) | | | | | | | |
| Swaps | **179,823** | **208,539** | **152,167** | **124,941** | **36,598** | **702,068** | 599,333 |
| Forward foreign exchange contracts (1) | **454,751** | **21,846** | **3,646** | **1,514** | **16** | **481,773** | 489,426 |
| Futures | **992** | **40** | **–** | **–** | **–** | **1,032** | 222 |
| Options | **139,587** | **12,230** | **1,505** | **–** | **–** | **153,322** | 114,789 |
| Total foreign exchange contracts | **775,153** | **242,655** | **157,318** | **126,455** | **36,614** | **1,338,195** | 1,203,770 |
| **Commodity Contracts** | | | | | | | |
| Swaps | **12,320** | **10,426** | **1,661** | **118** | **–** | **24,525** | 28,892 |
| Futures | **25,521** | **17,094** | **2,193** | **28** | **–** | **44,836** | 39,448 |
| Options | **53,033** | **21,345** | **4,741** | **–** | **–** | **79,119** | 28,678 |
| Total commodity contracts | **90,874** | **48,865** | **8,595** | **146** | **–** | **148,480** | 97,018 |
| **Equity Contracts** | **192,539** | **59,957** | **13,709** | **967** | **210** | **267,382** | 205,780 |
| **Credit Contracts** (3) | **255** | **640** | **21,986** | **3,137** | **1,852** | **27,870** | 17,516 |
| Total notional amount | **3,935,879** | **2,038,772** | **1,067,792** | **1,028,730** | **310,967** | **8,382,140** | 6,207,882 |

(1) Includes derivatives entered into in relation to our announced agreement to acquire Bank of the West and its subsidiaries. Refer to Note 10 for further details.
(2) Gold contracts are included in foreign exchange contracts.
(3) Under the SA-CCR, excludes loan commitment derivatives.

# Note 9: Premises and Equipment

We record all owned premises and equipment at cost less accumulated depreciation, and less any accumulated impairment, except land, which is recorded at cost. Buildings, computer equipment and operating system software, other equipment and leasehold improvements are depreciated on a straight-line basis over their estimated useful lives. When the major components of a building have different useful lives, they are accounted for separately and depreciated over each component's estimated useful life. The maximum estimated useful lives we use to depreciate our assets are as follows:

| | |
|---|---|
| Buildings | 10 to 40 years |
| Computer equipment and operating system software | 5 to 7 years |
| Other equipment | 10 years |
| Leasehold improvements | Lease term to a maximum of 10 years |

Depreciation methods, useful lives and the residual values of premises and equipment are reviewed annually for any change in circumstances and are adjusted if appropriate. At each reporting period, we review whether there are any indications that premises and equipment need to be tested for impairment. If there is an indication that an asset may be impaired, we test for impairment by comparing the asset's carrying value to its recoverable amount. The recoverable amount is calculated as the higher of value in use and fair value less costs to sell. Value in use is the present value of the future cash flows expected to be derived from the asset. An impairment charge is recorded when the recoverable amount is less than the carrying value. There were write-downs of premises and equipment of $6 million due to impairment during the year ended October 31, 2022 ($36 million in 2021). Gains and losses on disposal are included in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

## Leases

When we enter into a new arrangement as a lessee, a right-of-use asset is recognized equal to the lease liability, which is calculated based on the future lease payments discounted at our incremental borrowing rate over the lease term. In calculating our lease liability and corresponding right-of-use asset, we assess whether a contract is a lease by determining if we have the right to control the asset based on our ability to make decisions or direct how and for what purpose the asset is used.

The right-of-use asset is depreciated on a straight-line basis, based on the shorter of the useful life of the underlying asset or the lease term, and is adjusted for impairment losses, if any.

The lease liability accretes interest over the lease term, using the effective interest method, with the associated interest expense recognized in interest expense, other liabilities, in our Consolidated Statement of Income. We make estimates in determining the incremental borrowing rate that is used to discount lease liabilities, based on our expected costs of secured borrowing for the lease term. The lease term is based on the non-cancellable period and includes any options to extend or terminate which we are reasonably certain to exercise. The lease liability is remeasured when decisions are made to exercise options under the lease arrangement or when the likelihood of exercising an option within the lease changes. Refer to Note 14 for further information.

Amounts related to leases of low value are expensed when incurred in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

The total cost and associated accumulated depreciation for premises and equipment owned and leased are set out below:

| (Canadian $ in millions) | | | | | | | 2022 | | | | | | | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Land** | **Buildings** | **Computer equipment** | **Other equipment** | **Leasehold improvements** | **Right-of-use assets** | **Total** | Land | Buildings | Computer equipment | Other equipment | Leasehold improvements | Right-of-use assets | Total |
| **Cost** | | | | | | | | | | | | | | |
| Balance at beginning of year | **99** | **1,354** | **2,292** | **685** | **1,941** | **3,201** | **9,572** | 112 | 1,454 | 2,481 | 904 | 1,769 | 2,580 | 9,300 |
| Additions/lease modifications | **18** | **59** | **319** | **105** | **281** | **329** | **1,111** | – | 52 | 193 | 53 | 192 | 731 | 1,221 |
| Disposals (1) | **(8)** | **(44)** | **(53)** | **(29)** | **(246)** | **(235)** | **(615)** | (6) | (44) | (349) | (245) | (44) | (29) | (717) |
| Foreign exchange and other | **10** | **319** | **113** | **184** | **78** | **140** | **844** | (7) | (108) | (33) | (27) | 24 | (81) | (232) |
| Balance at end of year | **119** | **1,688** | **2,671** | **945** | **2,054** | **3,435** | **10,912** | 99 | 1,354 | 2,292 | 685 | 1,941 | 3,201 | 9,572 |
| **Accumulated Depreciation and Impairment** | | | | | | | | | | | | | | |
| Balance at beginning of year | **–** | **867** | **1,724** | **471** | **1,338** | **718** | **5,118** | – | 936 | 1,888 | 680 | 1,250 | 363 | 5,117 |
| Disposals (1) | **–** | **(35)** | **(48)** | **(25)** | **(243)** | **(153)** | **(504)** | – | (46) | (345) | (245) | (41) | (29) | (706) |
| Depreciation | **–** | **50** | **225** | **53** | **116** | **336** | **780** | – | 52 | 217 | 51 | 105 | 366 | 791 |
| Foreign exchange and other (2) | **–** | **306** | **106** | **168** | **59** | **38** | **677** | – | (75) | (36) | (15) | 24 | 18 | (84) |
| Balance at end of year | **–** | **1,188** | **2,007** | **667** | **1,270** | **939** | **6,071** | – | 867 | 1,724 | 471 | 1,338 | 718 | 5,118 |
| Net carrying value | **119** | **500** | **664** | **278** | **784** | **2,496** | **4,841** | 99 | 487 | 568 | 214 | 603 | 2,483 | 4,454 |

(1) Includes fully depreciated assets written off and assets sold as part of divestitures during the year. Refer to Note 10.
(2) Includes impairment charges.

# Note 10: Acquisitions and Divestitures

## Acquisitions

The cost of an acquisition is measured at the fair value of the consideration transferred, including contingent consideration. Acquisition-related costs are recognized as an expense in the period in which they are incurred. The identifiable assets acquired and liabilities assumed and contingent consideration are measured at their fair values at the date of acquisition. Goodwill is measured as the excess of the aggregate of the consideration transferred over the net of the fair value of identifiable assets acquired and liabilities assumed. The results of operations of acquired businesses are included in our consolidated financial statements beginning on the date of acquisition.

*Bank of the West*

On December 20, 2021, we announced a definitive agreement with BNP Paribas to acquire Bank of the West and its subsidiaries for a cash purchase price of US$16.3 billion, or US$13.4 billion net of an estimated US$2.9 billion of excess capital (at closing). Bank of the West provides a broad range of banking products and services primarily in the Western and Midwestern parts of the U.S. Subject to customary closing conditions, including regulatory approvals, the transaction is expected to close in the first calendar quarter of 2023 and will primarily be part of our U.S. P&C reporting segment.

When the transaction closes, the purchase price will be allocated to the identifiable assets and liabilities of Bank of the West, on the basis of their relative fair values, with the difference recorded as goodwill. The goodwill will not be tax deductible. The fair value of fixed rate loans, securities and deposits is largely dependent on interest rates. If interest rates increase, the fair value of the acquired fixed rate assets (in particular, loans and securities) will decrease, resulting in higher goodwill. If interest rates decrease, the opposite would be true. Conversely, the fair value of floating rate assets (liabilities) and non-maturity deposits approximates par, providing no natural offset to changes in fair value.

Changes in goodwill relative to our original assumptions announced on December 20, 2021 will impact capital ratios at close, because goodwill is treated as a deduction from capital under OSFI Basel III rules. In addition, since the purchase price of the acquisition is in U.S. dollars, any change in foreign exchange translation between the Canadian dollar relative to the U.S. dollar between the announcement and the close of the acquisition will result in a change to the Canadian dollar-equivalent goodwill.

To mitigate the impact of changes in interest rates between announcement and close, we entered into pay fixed/receive float interest rate swaps and purchased a portfolio of matched-duration government debt securities and other balance sheet instruments that generate interest income (the impact of which is recorded in Corporate Services). We recorded mark-to-market gains of $7,665 million on the swaps for the year ended October 31, 2022 in our Consolidated Statement of Income in non-interest revenue, trading revenues, as the swaps do not qualify for hedge accounting. Government debt securities and other instruments, which are measured at amortized cost, generated $48 million in our Consolidated Statement of Income in interest, dividend and fee income, securities, for the year ended October 31, 2022.

To mitigate the effects of any changes in the Canadian dollar equivalent of the purchase price on close, we entered into forward contracts, which qualify for hedge accounting. Changes in the fair value of these forward contracts of $638 million for the year ended October 31, 2022 are recorded in Other Comprehensive Income until close of the transaction.

*Radicle Group Inc.*

On July 20, 2022, we announced a definitive agreement to acquire Radicle Group Inc. (Radicle), a Calgary-based leader in sustainability advisory services and solutions, and technology-driven emissions measurement and management. All regulatory approvals for the acquisition have been received and the acquisition is expected to close on December 1, 2022. Radicle will form part of our BMO Capital Markets reporting segment. The impact of this acquisition is not expected to be material to the bank.

## Divestitures

Non-current non-financial assets (and disposal groups) are classified as held-for-sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. These assets meet the criteria for classification as held-for-sale if they are available for immediate sale in their present condition and their sale is considered highly probable to occur within one year. Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value less costs to sell. Any subsequent write-down to fair value less costs to sell is recognized in non-interest expense in our Consolidated Statement of Income. Any subsequent increase in the fair value less costs to sell, to the extent this does not exceed the cumulative write-down or impact the impairment previously allocated to goodwill, is also recognized in non-interest expense. Gains on disposals are recognized in non-interest revenue.

*EMEA and U.S. Asset Management*

On November 8, 2021, we completed the sale of our EMEA Asset Management business, part of our BMO Wealth Management operating segment, to Ameriprise Financial Inc. (Ameriprise) for £615 million (CAD$1,038 million) in an all-cash transaction. On the date of sale, assets and liabilities of approximately $1,779 million and $527 million, respectively, were derecognized. In connection with the completion of the EMEA portion of the sale, we recognized a before and after tax loss of $29 million relating to foreign currency translation reclassified from accumulated other comprehensive income in equity to non-interest revenue, foreign exchange gains, other than trading, in our Consolidated Statement of Income in the first quarter. The transaction also included the opportunity for certain BMO asset management clients in the U.S. to move to Ameriprise. These transfers were completed in the first quarter and resulted in tax expense of $22 million. Further transfers of certain U.S. Asset Management clients were completed in the second quarter with no material impact to the bank.

*Taplin, Canida & Habacht, LLC*

On January 27, 2022, we completed the sale of Taplin, Canida & Habacht, LLC, part of our U.S. asset management business to Loop Capital. The business sold was not considered material to the bank.

*Private Bank, Asia*

On April 30, 2021, we completed the sale of our Private Banking business in Hong Kong and Singapore, part of our BMO Wealth Management operating segment, to J. Safra Sarasin Group. The business sold was not considered material to the bank.

# Note 11: Goodwill and Intangible Assets

## Goodwill

When we complete an acquisition, we allocate the purchase price paid to the assets acquired, including identifiable intangible assets, and the liabilities assumed. Any portion of the consideration transferred that is in excess of the fair value of those net assets is considered to be goodwill. Goodwill is not amortized and is instead tested for impairment annually.

In performing the impairment test, we utilize the fair value less costs to sell for each group of CGUs based on discounted cash flow projections. Cash flows were projected for the first 10 years based on actual operating results, expected future business performance and past experience. Beyond 10 years, cash flows were assumed to grow at perpetual annual rates of up to 3.0% (3.0% in 2021). The discount rates we applied in determining the recoverable amounts in 2022 ranged from 6.8% to 11.2% (6.8% to 11.0% in 2021) and were based on our estimate of the cost of capital for each CGU. The cost of capital for each CGU was estimated using the Capital Asset Pricing Model, based on the historical betas of publicly traded peer companies that are comparable to the CGU. We use significant judgment to determine inputs to the discounted cash flow model, which is most sensitive to changes in future cash flows, discount rates and terminal growth rates applied to cash flows beyond the forecast period.

The key assumptions described above may change as market and economic conditions change. However, we estimate that reasonably possible changes in these assumptions are not expected to cause the recoverable amounts of our CGUs to decline below their carrying amounts.

A continuity of our goodwill by group of CGUs for the years ended October 31, 2021 and 2022 is as follows:

| (Canadian $ in millions) | Personal and Commercial Banking | | | BMO Wealth Management | | | BMO Capital Markets | Total |
|---|---|---|---|---|---|---|---|---|
| | Canadian P&C | U.S. P&C | Total | Wealth and Asset Management | Insurance | Total | | |
| Balance – October 31, 2020 | 97 | 3,841 | 3,938 | 2,168 | 2 | 2,170 | 427 | 6,535 |
| Dispositions during the year | – | – | – | (21) | – | (21) | – | (21) |
| Foreign exchange and other (1) | – | (274) | (274) | (837) (7) | – | (837) | (25) | (1,136) |
| Balance – October 31, 2021 | 97 | 3,567 | 3,664 | 1,310 | 2 | 1,312 | 402 | 5,378 |
| Dispositions during the year | **–** | **–** | **–** | **(538)** | **–** | **(538)** | **–** | **(538)** |
| Foreign exchange and other (1) | **–** | **362** | **362** | **50** | **–** | **50** | **33** | **445** |
| Balance – October 31, 2022 | **97** (2) | **3,929** (3) | **4,026** | **822** (4) | **2** (5) | **824** | **435** (6) | **5,285** |

(1) Other changes in goodwill included the effects of translating goodwill denominated in foreign currencies into Canadian dollars and purchase accounting adjustments related to prior-year purchases.
(2) Relates primarily to bcpbank Canada, Diners Club, Aver Media LP and GE Transportation Finance.
(3) Relates primarily to First National Bank & Trust, Ozaukee Bank, Merchants and Manufacturers Bancorporation, Inc., Diners Club, AMCORE, M&I and GE Transportation Finance.
(4) Relates primarily to BMO Nesbitt Burns Inc., Guardian Group of Funds Ltd., M&I, myCFO, Inc., Stoker Ostler Wealth Advisors, Inc. and CTC Consulting LLC. The Private Banking business in Hong Kong and Singapore was disposed in fiscal 2021. Pyrford International Limited, LGM Investments Limited and F&C Asset Management plc were disposed in fiscal 2022. Refer to Note 10 for further information.
(5) Relates to AIG Life Holdings (Canada), ULC.
(6) Relates to Gerard Klauer Mattison, BMO Nesbitt Burns Inc., Paloma Securities L.L.C., M&I, Greene Holcomb Fisher, KGS-Alpha Capital Markets and Clearpool.
(7) Includes a write-down of $779 million of goodwill attributable to the sale of our EMEA Asset Management business in fiscal 2021. Refer to Note 10 for further information.

### Intangible Assets

Intangible assets related to our acquisitions are initially recorded at their fair value at the acquisition date and subsequently at cost less accumulated amortization. Software is recorded at cost less accumulated amortization. Amortization expense is recorded in amortization of intangible assets in our Consolidated Statement of Income. The following table presents the changes in the balance of these intangible assets:

| (Canadian $ in millions) | Customer relationships | Core deposits | Software – amortizing | Software under development | Other | Total |
|---|---|---|---|---|---|---|
| Cost as at October 31, 2020 | 767 | 962 | 5,416 | 280 | 621 | 8,046 |
| Additions | – | – | 65 | 430 | 30 | 525 |
| Transfers | – | – | 498 | (498) | – | – |
| Disposals (2) | (9) | – | (313) | (4) | (28) | (354) |
| Foreign exchange and other | (39) | (68) | (118) | (4) | (22) | (251) |
| Cost as at October 31, 2021 | 719 | 894 | 5,548 (1) | 204 | 601 | 7,966 |
| Additions | **–** | **–** | **11** | **662** | **20** | **693** |
| Transfers | **–** | **–** | **611** | **(611)** | **–** | **–** |
| Disposals (2) | **(247)** | **–** | **(53)** | **(1)** | **(319)** | **(620)** |
| Foreign exchange and other | **49** | **84** | **120** | **5** | **20** | **278** |
| Cost as at October 31, 2022 | **521** | **978** | **6,237** (1) | **259** | **322** | **8,317** |

(1) Includes $5,486 million of internally generated software as at October 31, 2022 ($4,798 million as at October 31, 2021).
(2) Includes fully depreciated assets written off and assets sold as part of divestitures during the year. Refer to Note 10 for further information.

The following table presents the accumulated amortization of our intangible assets:

| (Canadian $ in millions) | Customer relationships | Core deposits | Software – amortizing | Software under development | Other | Total |
|---|---|---|---|---|---|---|
| Accumulated amortization at October 31, 2020 | 616 | 933 | 3,681 | – | 374 | 5,604 |
| Amortization | 35 | 27 | 530 | – | 42 | 634 |
| Disposals (2)(3) | (5) | – | (308) | – | (28) | (341) |
| Foreign exchange and other | (30) | (66) | (82) | – | (19) | (197) |
| Accumulated amortization at October 31, 2021 | 616 | 894 | 3,821 (1) | – | 369 | 5,700 |
| Amortization | **22** | **–** | **556** | **–** | **26** | **604** |
| Disposals (2)(3) | **(247)** | **–** | **(49)** | **–** | **(123)** | **(419)** |
| Foreign exchange and other | **44** | **84** | **94** | **–** | **17** | **239** |
| Accumulated amortization at October 31, 2022 | **435** | **978** | **4,422** (1) | **–** | **289** | **6,124** |
| Carrying value at October 31, 2022 | **86** | **–** | **1,815** | **259** | **33** | **2,193** |
| Carrying value at October 31, 2021 | 103 | – | 1,727 | 204 | 232 | 2,266 |

(1) Includes $3,819 million of internally generated software as at October 31, 2022 ($3,231 million as at October 31, 2021).
(2) Includes fully depreciated assets written off and assets sold as part of divestitures during the year. Refer to Note 10 for further information.
(3) Includes impairment charges.

Intangible assets are amortized to income over the period during which we believe the assets will benefit us, on either a straight-line or an accelerated basis, over a period not to exceed 15 years. We have $nil million as at October 31, 2022 ($166 million as at October 31, 2021) in intangible assets with indefinite lives that relate primarily to fund management contracts.

The useful lives of intangible assets are reviewed annually for any changes in circumstances. We test definite-life intangible assets for impairment when events or changes in circumstances indicate that their carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell.

There were write-downs of software-related intangible assets of $5 million during the year ended October 31, 2022 ($9 million in 2021).

# Note 12: Other Assets

### Customers' Liability Under Acceptances

Acceptances represent a form of negotiable short-term debt issued by our customers, which we guarantee for a fee. The fees earned are recorded in non-interest revenue, lending fees, in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under acceptances is recorded in other liabilities in our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets in our Consolidated Balance Sheet.

## Other

The components of other within other assets are as follows:

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| Accounts receivable, prepaid expenses and other items | **3,634** | 3,302 |
| Accrued interest receivable | **2,726** | 1,452 |
| Bank owned life insurance policies | **4,509** | 4,096 |
| Leased vehicles, net of accumulated amortization | **263** | 415 |
| Cash collateral | **13,586** | 6,436 |
| Due from clients, dealers and brokers | **313** | 353 |
| Insurance-related assets (1) | **2,575** | 2,080 |
| Other employee future benefits assets (Note 21) | **51** | 40 |
| Pension asset (Note 21) | **1,267** | 947 |
| Precious metals (2) | **2,970** | 3,290 |
| Total | **31,894** | 22,411 |

(1) Includes $1,001 million of investment properties ($881 million as at October 31, 2021) carried at cost less accumulated amortization. These investment properties support our insurance contract liabilities. The fair value, determined by external independent property valuers for disclosure purposes, is $1,195 million and categorized as Level 3 using models with unobservable market inputs ($1,033 million as at October 31, 2021).

(2) Precious metals are recorded at fair value based on quoted prices in active markets.

# Note 13: Deposits

| (Canadian $ in millions) | Payable on demand: Interest bearing | Payable on demand: Non-interest bearing | Payable after notice | Payable on a fixed date (2) | 2022 | 2021 |
|---|---|---|---|---|---|---|
| Deposits by: | | | | | | |
| Banks (1) | **4,938** | **2,096** | **1,417** | **22,450** | **30,901** | 26,611 |
| Business and government | **49,074** | **52,355** | **151,298** | **243,104** | **495,831** | 442,248 |
| Individuals | **4,435** | **36,822** | **119,129** | **82,360** | **242,746** | 216,772 |
| Total (3) | **58,447** | **91,273** | **271,844** | **347,914** | **769,478** | 685,631 |
| Booked in: | | | | | | |
| Canada | **48,260** | **81,726** | **126,204** | **259,100** | **515,290** | 427,316 |
| United States | **9,851** | **9,478** | **143,819** | **54,572** | **217,720** | 232,830 |
| Other countries | **336** | **69** | **1,821** | **34,242** | **36,468** | 25,485 |
| Total | **58,447** | **91,273** | **271,844** | **347,914** | **769,478** | 685,631 |

(1) Includes regulated and central banks.

(2) Includes $51,746 million of senior unsecured debt as at October 31, 2022 subject to the Bank Recapitalization (Bail-In) regime ($35,959 million as at October 31, 2021). The Bail-In regime provides certain statutory powers to the Canada Deposit Insurance Corporation, including the ability to convert specified eligible shares and liabilities into common shares if the bank becomes non-viable.

(3) Included in deposits as at October 31, 2022 and 2021 are $384,080 million and $342,967 million, respectively, of deposits denominated in U.S. dollars, and $46,830 million and $29,937 million, respectively, of deposits denominated in other foreign currencies.

Deposits are measured at amortized cost, except for structured notes, structured deposits and metal deposits, which are measured at FVTPL. Deposits payable on demand are comprised primarily of our customers' chequing accounts, on some of which we pay interest. Our customers need not notify us prior to withdrawing money from their chequing accounts. Deposits payable after notice are comprised primarily of our customers' savings accounts, on which we pay interest. Deposits payable on a fixed date are comprised of:

- Various investment instruments purchased by our customers to earn interest over a fixed period, such as retail and small business term deposits, wholesale funding and guaranteed investment certificates. Deposits totalling $29,966 million as at October 31, 2022 ($20,991 million as at October 31, 2021) can be early redeemed, either fully or partially, by customers without penalty. These are classified as payable on a fixed date, based on their remaining contractual maturities.
- Commercial paper, which totalled $42,138 million as at October 31, 2022 ($13,834 million as at October 31, 2021).
- Covered bonds, which totalled $29,076 million as at October 31, 2022 ($23,495 million as at October 31, 2021).

The following table presents the maturity schedule for deposits payable on a fixed date:

| (Canadian $ in millions) | Within 1 year | 1 to 2 years | 2 to 3 years | 3 to 4 years | 4 to 5 years | Over 5 years | Total |
|---|---|---|---|---|---|---|---|
| **As at October 31, 2022** | **228,679** | **39,992** | **23,445** | **16,665** | **22,868** | **16,265** | **347,914** |
| As at October 31, 2021 | 163,370 | 33,778 | 24,826 | 8,908 | 11,995 | 19,925 | 262,802 |

We have unencumbered liquid assets of $335,299 million to support these and other deposit liabilities ($317,251 million as at October 31, 2021).

The following table presents deposits payable on a fixed date and greater than one hundred thousand dollars:

| (Canadian $ in millions) | Canada | United States | Other | Total |
|---|---|---|---|---|
| **As at October 31, 2022** | **230,475** | **50,542** | **34,241** | **315,258** |
| As at October 31, 2021 | 140,002 | 72,399 | 23,921 | 236,322 |

The following table presents the maturity schedule for deposits payable on a fixed date and greater than one hundred thousand dollars, that are booked in Canada:

| (Canadian $ in millions) | Less than 3 months | 3 to 6 months | 6 to 12 months | Over 12 months | Total |
|---|---|---|---|---|---|
| **As at October 31, 2022** | **46,792** | **28,826** | **55,288** | **99,569** | **230,475** |
| As at October 31, 2021 | 20,626 | 12,761 | 20,933 | 85,682 | 140,002 |

## Structured Note Liabilities

Most of our structured note liabilities included in deposits have been designated at fair value through profit or loss, which aligns the accounting result with the way the portfolio is managed. The change in fair value of these structured notes is recorded in non-interest revenue, trading revenues, with the changes in fair value due to own credit risk recognized in other comprehensive income. The impact of changes in our own credit risk is measured based on movements in our own credit spread year over year.

The following table presents fair value and changes in fair value of structured note liabilities:

| (Canadian $ in millions) | Fair value | Notional amount due at contractual maturity | Change in fair value recorded in the Consolidated Statement of Income (1) | Change in fair value due to own credit risk recorded in OCI (before tax) | Cumulative change in fair value due to own credit risk recorded in AOCI (before tax) |
|---|---|---|---|---|---|
| **As at October 31, 2022** | **26,305** | **32,507** | **4,617** | **1,653** | **1,245** |
| As at October 31, 2021 | 22,665 | 22,448 | (1,310) | (240) | (408) |

(1) Change in fair value may be offset by related change in fair value on hedge contracts.

# Note 14: Other Liabilities

## Acceptances

Acceptances represent a form of negotiable short-term debt that is issued by our customers, which we guarantee for a fee. The fees earned are recorded in non-interest revenue, lending fees, in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under acceptances is recorded in other liabilities in our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets in our Consolidated Balance Sheet.

## Securities Lending and Borrowing

Securities lending and borrowing transactions are generally collateralized by securities or cash. Cash advanced or received as collateral is recorded in securities borrowed or purchased under resale agreements, or other liabilities, securities lent or sold under repurchase agreements, respectively. Interest earned on cash collateral is recorded in interest, dividend and fee income in our Consolidated Statement of Income, and interest expense on cash collateral is recorded in interest expense, other liabilities, in our Consolidated Statement of Income. The transfer of the securities to counterparties is only reflected in our Consolidated Balance Sheet if the risks and rewards of ownership have also been transferred. Securities borrowed are not recognized in our Consolidated Balance Sheet unless they are then sold to third parties, in which case the obligation to return the securities is recorded at fair value in securities sold but not yet purchased, with any gains or losses recorded in non-interest revenue, trading revenues.

## Securities Sold But Not Yet Purchased

Securities sold but not yet purchased represent our obligations to deliver securities that we did not own at the time of sale. These obligations are recorded at their fair value. Adjustments to fair value as at the balance sheet date and gains and losses on the settlement of these obligations are recorded in trading revenues in our Consolidated Statement of Income.

## Securitization and Structured Entities' Liabilities

Securitization and structured entities' liabilities include notes issued by our consolidated bank securitization vehicles and liabilities associated with the securitization of our Canadian mortgage loans as part of the Canada Mortgage Bond program, the National Housing Act Mortgage-Backed Securities program and our own programs. Additional information on our securitization programs and associated liabilities is provided in Notes 6 and 7. These liabilities are initially measured at fair value plus any directly attributable costs and are subsequently measured at amortized cost. The interest expense related to these liabilities is recorded in interest expense, other liabilities, in our Consolidated Statement of Income.

## Other

The components of other within other liabilities are as follows:

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| Accounts payable, accrued expenses and other items | **11,647** | 9,444 |
| Accrued interest payable | **2,319** | 960 |
| Allowance for credit losses on off-balance sheet items | **381** | 394 |
| Cash collateral | **5,042** | 6,733 |
| Insurance-related liabilities | **11,201** | 12,845 |
| Lease liabilities | **2,835** | 2,743 |
| Liabilities of subsidiaries | **7,494** | – |
| Other employee future benefits liability (Note 21) | **832** | 1,094 |
| Payable to brokers, dealers and clients | **2,966** | 3,413 |
| Pension liability (Note 21) | **88** | 138 |
| Total | **44,805** | 37,764 |

## Insurance-Related Liabilities

We are engaged in insurance businesses related to life insurance, annuities, which includes pension risk, accident and sickness, creditor insurance, and reinsurance. We designate the obligations related to certain investment contracts in our insurance business at fair value through profit or loss, which eliminates a measurement inconsistency that would otherwise arise from measuring the investment contract liabilities and offsetting changes in the fair value of the investments supporting them on a different basis. The change in fair value of these investment contract liabilities is recorded in insurance claims, commissions and changes in policy benefit liabilities, with the exception of changes in our own credit risk recognized in other comprehensive income. The impact of changes in our own credit risk is measured based on movements in our own credit spread year over year. Changes in the fair value of investments backing these investment contract liabilities are recorded in non-interest revenue, insurance revenue.

The following table presents the fair value and changes in fair value in our investment contract liabilities:

| (Canadian $ in millions) | Fair value | Notional amount due at contractual maturity | Change in fair value recorded in the Consolidated Statement of Income | Change in fair value due to own credit risk recorded in OCI (before tax) | Cumulative change in fair value due to own credit risk recognized in AOCI (before tax) |
|---|---|---|---|---|---|
| **As at October 31, 2022** | **770** | **1,459** | **(114)** | **94** | **22** |
| As at October 31, 2021 | 1,046 | 1,526 | (81) | (26) | (72) |

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions.

A reconciliation of the change in insurance-related liabilities is as follows:

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| Insurance-related liabilities, beginning of year | **12,845** | 12,441 |
| Increase (decrease) in life insurance policy benefit liabilities from: | | |
| New business | **354** | 765 |
| In-force policies | **(1,938)** | (306) |
| Changes in actuarial assumptions and methodology | **201** | (72) |
| Foreign currency | **3** | (2) |
| Net increase (decrease) in life insurance policy benefit liabilities | **(1,380)** | 385 |
| Change in other insurance-related liabilities | **(264)** | 19 |
| Insurance-related liabilities, end of year | **11,201** | 12,845 |

## Reinsurance

In the ordinary course of business, our insurance subsidiaries reinsure risks to other insurance and reinsurance companies in order to provide greater diversification, limit loss exposure to large risks, and provide additional capacity for future growth. These ceding reinsurance arrangements do not relieve our insurance subsidiaries of their direct obligation to the insured parties. We evaluate the financial condition of the reinsurers and monitor their credit ratings to minimize our exposure to losses from reinsurer insolvency.

Reinsurance premiums ceded are recorded net against direct premium income and are included in non-interest revenue, insurance revenue, in our Consolidated Statement of Income for the years ended October 31, 2022 and 2021, as shown in the table below:

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| Direct premium income | **1,623** | 2,050 |
| Ceded premiums | **(399)** | (408) |
| | **1,224** | 1,642 |

## Lease Liabilities

When we enter into leases we record lease liabilities representing the present value of future lease payments over the lease term. Interest expense recorded on lease liabilities for the year ended October 31, 2022 was $59 million ($56 million in 2021). Total cash outflow for lease liabilities for the year ended October 31, 2022 was $342 million ($383 million in 2021). Variable lease payments (for example maintenance, utilities and property taxes) not included in the measurement of lease liabilities for the year ended October 31, 2022 were $206 million ($236 million in 2021).

The maturity profile of our undiscounted lease liabilities is $350 million for 2023, $342 million for 2024, $323 million for 2025, $298 million for 2026, $275 million for 2027 and $1,643 million for 2028 and thereafter.

# Note 15: Subordinated Debt

Subordinated debt represents our direct unsecured obligations to our debt holders, in the form of notes and debentures, and forms part of our regulatory capital. Subordinated debt is recorded at amortized cost using the effective interest rate method. Where appropriate, we enter into fair value hedges to hedge the risks caused by changes in interest rates (see Note 8). The rights of the holders of our notes and debentures are subordinate to the claims of depositors and certain other creditors. We require approval from OSFI before we can redeem any part of our subordinated debt.

The face values, terms to maturity and carrying values of our subordinated debt are as follows:

| (Canadian $ in millions, except as noted) | Face value | Maturity date | Interest rate (%) | Redeemable at our option | **2022 Total** | 2021 Total |
|---|---|---|---|---|---|---|
| Debentures Series 20 | 150 | December 2025 to 2040 | 8.25 | Not redeemable | **146** | 146 |
| Series I Medium-Term Notes, Second Tranche (1) | 850 | June 2027 | 2.57 | June 2022 (2) | **–** | 843 |
| 3.803% Subordinated Notes due 2032 (1) | US 1,250 | December 2032 | 3.80 | December 2027 (3) | **1,497** | 1,567 |
| 4.338% Subordinated Notes due 2028 (1) | US 850 | October 2028 | 4.34 | October 2023 (4) | **1,135** | 1,096 |
| Series J Medium-Term Notes, First Tranche (1) | 1,000 | September 2029 | 2.88 | September 2024 (5) | **998** | 998 |
| Series J Medium-Term Notes, Second Tranche (1) | 1,250 | June 2030 | 2.08 | June 2025 (6) | **1,248** | 1,248 |
| Series K Medium-Term Notes, First Tranche (1) | 1,000 | July 2031 | 1.93 | July 2026 (7) | **984** | 995 |
| 3.088% Subordinated Notes due 2037 (1) | US 1,250 | January 2037 | 3.09 | January 2032 (8) | **1,393** | – |
| Series L Medium-Term Notes, First Tranche (1) | 750 | October 2032 | 6.53 | October 2027 (9) | **749** | – |
| Total (10) | | | | | **8,150** | 6,893 |

(1) These notes include a non-viability contingent capital provision, which is necessary for notes issued after a certain date to qualify as regulatory capital under Basel III. As such, they are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted or agreed to accept a capital injection, or equivalent support, to avoid non-viability. In such an event, each note is convertible into common shares pursuant to an automatic conversion formula with a multiplier and a conversion price based on the greater of: (i) a floor price of $5.00 and (ii) the current market price of our common shares based on the volume weighted-average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the par value of the note (including accrued and unpaid interest on such note) by the conversion price and then applying the multiplier.

(2) All $850 million Series I Medium-Term Notes Second Tranche were redeemed on June 1, 2022 for 100% of the principal amount, plus accrued and unpaid interest to, but excluding, the redemption date.

(3) Redeemable at par on December 15, 2027 together with accrued and unpaid interest to, but excluding, the redemption date.

(4) Redeemable at par on October 5, 2023 together with accrued and unpaid interest to, but excluding, the redemption date.

(5) Redeemable at par on September 17, 2024 together with accrued and unpaid interest to, but excluding, the redemption date.

(6) Redeemable at par on June 17, 2025 together with accrued and unpaid interest to, but excluding, the redemption date.

(7) Redeemable at par on July 22, 2026 together with accrued and unpaid interest to, but excluding, the redemption date.

(8) On January 10, 2022, we issued US$1,250 million of unsecured subordinated debt through our U.S. Medium-Term Note Program. These notes are redeemable at par on January 10, 2032 together with accrued and unpaid interest to, but excluding, the redemption date.

(9) On October 27, 2022, we issued $750 million of unsecured subordinated debt through our Canadian Medium-Term Note Program. These notes are redeemable at par on October 27, 2027 together with accrued and unpaid interest to, but excluding, the redemption date.

(10) Certain amounts of subordinated debt were issued at a premium or discount and include fair value hedge adjustments, which together decreased their carrying value as at October 31, 2022 by $565 million (increased by $44 million in 2021); see Note 8 for further details on hedge adjustments. The carrying value is also adjusted for our subordinated debt holdings, held for market-making purposes.

The aggregate remaining maturities of our subordinated debt, based on the maturity dates under the terms of issue, can be found in the blue-tinted font in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section of Management's Discussion and Analysis within this report.

# Note 16: Equity

## Preferred and Common Shares Outstanding and Other Equity Instruments

(Canadian $ in millions, except as noted)

| | 2022 | | | 2021 | | |
|---|---|---|---|---|---|---|
| | **Number of shares** | **Amount** | **Dividends declared per share** | Number of shares | Amount | Dividends declared per share |
| **Preferred Shares – Classified as Equity** | | | | | | |
| Class B – Series 27 | **20,000,000** | **500** | **0.96** | 20,000,000 | 500 | 0.96 |
| Class B – Series 29 | **16,000,000** | **400** | **0.91** | 16,000,000 | 400 | 0.91 |
| Class B – Series 31 | **12,000,000** | **300** | **0.96** | 12,000,000 | 300 | 0.96 |
| Class B – Series 33 | **8,000,000** | **200** | **0.76** | 8,000,000 | 200 | 0.76 |
| Class B – Series 38 (1) | **–** | **–** | **0.30** | 24,000,000 | 600 | 1.21 |
| Class B – Series 40 (2) | **–** | **–** | **0.56** | 20,000,000 | 500 | 1.13 |
| Class B – Series 42 (3) | **–** | **–** | **0.83** | 16,000,000 | 400 | 1.10 |
| Class B – Series 44 | **16,000,000** | **400** | **1.21** | 16,000,000 | 400 | 1.21 |
| Class B – Series 46 | **14,000,000** | **350** | **1.28** | 14,000,000 | 350 | 1.28 |
| Class B – Series 50 (4) | **500,000** | **500** | **24.64** | – | – | – |
| **Preferred Shares – Classified as Equity** | | **2,650** | | | 3,650 | |
| **Other Equity Instruments** | | | | | | |
| 4.800% Additional Tier 1 Capital Notes (AT1 Notes) | | **658** | | | 658 | |
| 4.300% Limited Recourse Capital Notes, Series 1 (Series 1 LRCNs) | | **1,250** | | | 1,250 | |
| 5.625% Limited Recourse Capital Notes, Series 2 (Series 2 LRCNs) (5) | | **750** | | | – | |
| 7.325% Limited Recourse Capital Notes, Series 3 (Series 3 LRCNs) (6) | | **1,000** | | | – | |
| **Preferred Shares and Other Equity Instruments** | | **6,308** | | | 5,558 | |
| **Common Shares** | | | | | | |
| Balance at beginning of year | **648,136,472** | **13,599** | | 645,889,396 | 13,430 | |
| Issued to finance a portion of the announced acquisition (Note 10) | **20,843,750** | **3,106** | | – | – | |
| Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan | **7,531,233** | **999** | | – | – | |
| Issued/cancelled under the Stock Option Plan and other stock-based compensation plans (Note 20) | **733,591** | **57** | | 1,630,867 | 122 | |
| Treasury shares sold/(purchased) | **(138,168)** | **(17)** | | 616,209 | 47 | |
| **Balance at End of Year** (7) | **677,106,878** | **17,744** | **5.44** | 648,136,472 | 13,599 | 4.24 |

(1) Series 38 was redeemed and final dividends were paid on February 25, 2022.
(2) Series 40 was redeemed and final dividends were paid on May 25, 2022.
(3) Series 42 was redeemed and final dividends were paid on August 25, 2022.
(4) On July 27, 2022, we issued Class B Series 50 Preferred Shares for $500 million.
(5) On March 15, 2022, we issued Series 2 LRCNs for $750 million.
(6) On September 13, 2022, we issued Series 3 LRCNs for $1,000 million.
(7) Common shares are net of 174,689 treasury shares as at October 31, 2022 (36,521 treasury shares as at October 31, 2021).

## Preferred Share Rights and Privileges

(Canadian $, except as noted)

| | Redemption amount | Non-cumulative dividend (1) | Reset premium | Date redeemable / convertible | Convertible to |
|---|---|---|---|---|---|
| Class B – Series 27 | 25.00 | $ 0.24075 (2) | 2.33% | May 25, 2024 (3)(4) | Class B – Series 28 (5)(6) |
| Class B – Series 29 | 25.00 | $ 0.2265 (2) | 2.24% | August 25, 2024 (3)(4) | Class B – Series 30 (5)(6) |
| Class B – Series 31 | 25.00 | $0.240688 (2) | 2.22% | November 25, 2024 (3)(4) | Class B – Series 32 (5)(6) |
| Class B – Series 33 | 25.00 | $0.190875 (2) | 2.71% | August 25, 2025 (3)(4) | Class B – Series 34 (5)(6) |
| Class B – Series 44 | 25.00 | $0.303125 (2) | 2.68% | November 25, 2023 (3)(4) | Class B – Series 45 (5)(6) |
| Class B – Series 46 | 25.00 | $ 0.31875 (2) | 3.51% | May 25, 2024 (3)(4) | Class B – Series 47 (5)(6) |
| Class B – Series 50 | 1,000.00 | $24.64400 (2) | 4.25% | November 26, 2027 (3) | Not convertible (6) |

(1) Non-cumulative dividends are payable quarterly as and when declared by the Board of Directors, except for Class B – Series 50 preferred shares which are payable semi-annually.
(2) The dividend rate will reset on the date redeemable and every five years thereafter at a rate equal to the 5-year Government of Canada bond yield plus the reset premium noted. If converted to a floating rate series, the rate will be set as, and when declared, at the 3-month Government of Canada treasury bill yield plus the reset premium noted.
(3) Redeemable on the date noted and every five years thereafter.
(4) Convertible on the date noted and every five years thereafter if not redeemed. If converted, the shares will become floating rate preferred shares.
(5) If converted, the holders have the option to convert back to the original preferred shares on subsequent redemption dates.
(6) The shares issued include a non-viability contingent capital provision, which is necessary for the shares to qualify as regulatory capital under Basel III. Refer to the Non-Viability Contingent Capital paragraph below for details.

On August 25, 2022, we redeemed all of our outstanding 16 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 42 (Non-Viability Contingent Capital (NVCC)) for an aggregate total of $400 million.

On July 27, 2022, we issued 500,000 Non-Cumulative 5-Year Rate Reset Class B Preferred Shares Series 50 (NVCC) at a price of $1,000 per share, for gross proceeds of $500 million. For the initial five-year period to the earliest redemption date of November 26, 2027, the shares pay quarterly cash dividends, if declared, at a rate of 7.373% per annum. The dividend rate will reset on the earliest redemption date and every fifth year thereafter at a rate equal to the 5-year Government of Canada bond yield plus a premium of 4.250%.

On May 25, 2022, we redeemed all of our outstanding 20 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 40 (NVCC) for an aggregate total of $500 million.

On February 25, 2022, we redeemed all of our outstanding 24 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 38 (NVCC) for an aggregate total of $600 million.

## Other Equity Instruments

On March 15, 2022 and September 13, 2022, we issued $750 million 5.625% Limited Recourse Capital Notes, Series 2 (Series 2 LRCNs) (NVCC) and $1,000 million 7.325% Limited Recourse Capital Notes, Series 3 (Series 3 LRCNs) (NVCC), respectively. Together with the $1,250 million 4.300% Limited Recourse Capital Notes, Series 1 (Series 1 LRCNs) (NVCC), these LRCNs are classified as equity and form part of our Additional Tier 1 capital. Upon the occurrence of a recourse event, the noteholders will have recourse to assets held in a consolidated trust managed by a third-party trustee. The trust assets are currently comprised of $1,250 million of BMO issued Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 48 (NVCC) (Preferred Shares Series 48), $750 million of BMO issued Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 49 (NVCC) (Preferred Shares Series 49) and $1,000 million of BMO issued Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 51 (NVCC) (Preferred Shares Series 51) issued concurrently with Series 1, Series 2 and Series 3 LRCNs, respectively. As the Preferred Shares Series 48, Series 49 and Series 51 eliminate on consolidation, they do not currently form part of our Additional Tier 1 capital.

The US$500 million 4.800% Additional Tier 1 Capital Notes (AT1 Notes) (NVCC), are also classified as equity and form part of our Additional Tier 1 capital.

The LRCNs and AT1 Notes are compound financial instruments that have both equity and liability features. On the date of issuance, we assigned an insignificant value to the liability components of both types of instrument and, as a result, the full amount of proceeds has been classified as equity. Semi-annual distributions on the LRCNs and AT1 Notes will be recorded when payable. The LRCNs and AT1 Notes are subordinate to the claims of the depositors and certain other creditors in right of payment. The following table shows the details of our AT1 Notes and LRCNs as at October 31, 2022 and 2021.

| (Canadian $ in millions, except as noted) | | | | | **2022** | 2021 |
|---|---|---|---|---|---|---|
| | Face value | Interest rate (%) | Redeemable at our option | Convertible to | **Total** | Total |
| 4.800% Additional Tier 1 Capital Notes | US$ 500 | 4.800 (1) | August 2024 (2) | Variable number of common shares (3) | **658** | 658 |
| 4.300% Limited Recourse Capital Notes, Series 1 | $1,250 | 4.300 (4) | November 2025 (2) | Variable number of common shares (4) | **1,250** | 1,250 |
| 5.625% Limited Recourse Capital Notes, Series 2 | $ 750 | 5.625 (4) | May 2027 (2) | Variable number of common shares (4) | **750** | – |
| 7.325% Limited Recourse Capital Notes, Series 3 | $1,000 | 7.325 (4) | November 2027 (2) | Variable number of common shares (4) | **1,000** | – |
| Total | | | | | **3,658** | 1,908 |

(1) Non-cumulative interest is payable semi-annually in arrears, at the bank's discretion.
(2) The notes are redeemable at a redemption price equal to 100% of the principal amount plus any accrued and unpaid interest, in whole or in part, at our option on any interest payment date on or after the first interest reset date or following certain regulatory or tax events. The bank may, at any time, purchase the notes at any price in the open market.
(3) The notes issued include a non-viability contingent capital provision, which is necessary for the notes to qualify as regulatory capital under Basel III. Refer to the Non-Viability Contingent Capital paragraph below for details.
(4) Non-deferrable interest is payable semi-annually on these notes, at the bank's discretion. Non-payment of interest will result in a recourse event, with the noteholders' sole remedy being the holders' proportionate share of trust assets comprised of our NVCC Preferred Shares Series 48 for Series 1 LRCNs, Preferred Shares Series 49 for Series 2 LRCNs and Preferred Shares Series 51 for Series 3 LRCNs. In such an event, the delivery of the trust assets will represent the full and complete extinguishment of our obligations under the LRCNs. In circumstances under which NVCC, including the Preferred Shares Series 48, Preferred Shares Series 49 and Preferred Shares Series 51 for Series 1, Series 2 and Series 3 LRCNs, respectively, would be converted into common shares of the bank (described below), the LRCNs would be redeemed, and the noteholders' sole remedy would be their proportionate share of trust assets, then comprised of common shares of the bank received by the trust on conversion.

## Common Shares

On March 29, 2022, we issued 20,843,750 common shares for $3,106 million to finance a portion of the purchase price for the announced acquisition of Bank of the West. Refer to Note 10 for further information.

## Authorized Share Capital

We classify financial instruments that we issue as financial liabilities, equity instruments or compound instruments. Financial instruments that will be settled by a variable number of our common shares upon conversion by the holders are classified as liabilities in our Consolidated Balance Sheet. Dividends and interest payments on financial liabilities are classified as interest expense in our Consolidated Statement of Income. Financial instruments are classified as equity instruments when there is no contractual obligation to transfer cash or other financial assets. Issued instruments that are not mandatorily redeemable, or that are not convertible into a variable number of our common shares at the holder's option, are classified as equity and presented in share capital. Dividend payments on equity instruments are recognized as a reduction in equity.

*Common Shares*

We are authorized by our shareholders to issue an unlimited number of our common shares, without par value, for unlimited consideration. Our common shares are not redeemable or convertible. Dividends are declared by our Board of Directors at their discretion. Historically, the Board of Directors has declared dividends on a quarterly basis and the amount can vary from quarter to quarter.

*Preferred Shares*

We are authorized by our shareholders to issue an unlimited number of Class A Preferred Shares and Class B Preferred Shares, without par value, in series, for unlimited consideration. Class B Preferred Shares may be issued in a foreign currency.

*Treasury Shares*

When we purchase our common shares as part of our trading business, we record the cost of those shares as a reduction in shareholders' equity. If those shares are resold at a price higher than their cost, the premium is recorded as an increase in contributed surplus. If those shares are resold at a price below their cost, the discount is recorded as a reduction first to contributed surplus and then to retained earnings for any amount in excess of the total contributed surplus related to treasury shares.

## Non-Viability Contingent Capital

Class B – Series 27, Class B – Series 29, Class B – Series 31, Class B – Series 33, Class B – Series 44, Class B – Series 46 and Class B – Series 50 preferred share issues, the AT1 Notes and, by virtue of the recourse to the Preferred Shares Series 48, Preferred Shares Series 49 and Preferred Shares Series 51 for Series 1, Series 2 and Series 3 LRCNs, respectively, the LRCNs include a non-viability contingent capital provision which is necessary for them to qualify as regulatory capital under Basel III. As such, they are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted, or agreed to accept, a capital injection, or equivalent support, to avoid non-viability. In such an event, each preferred share or other equity instrument is convertible into common shares pursuant to an automatic conversion formula and a conversion price based on the greater of: (i) a floor price of $5.00 and (ii) the current market price of our common shares based on the volume weighted-average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the value of the preferred share or other equity instrument issuance, including declared and unpaid dividends on such preferred share or other equity instrument issuance, by the conversion price and then applying the multiplier.

## Normal Course Issuer Bid

On December 3, 2021, we announced our intention, subject to the approval of OSFI and the TSX, to purchase for cancellation up to 22.5 million of our common shares under a normal course issuer bid (NCIB). Together with the announcement of the Bank of the West acquisition, we noted that we would not proceed with establishing a NCIB and did not expect to repurchase shares prior to the closing of the acquisition.

## Share Redemption and Dividend Restrictions

OSFI must approve any plan to redeem any of our preferred share issues or other equity instruments for cash.

We are prohibited from declaring dividends on our preferred or common shares when we would be, as a result of paying such a dividend, in contravention of the capital adequacy, liquidity or any other regulatory directive issued under the *Bank Act (Canada)*. In addition, common share dividends cannot be paid unless all dividends declared and payable on our preferred shares have been paid or sufficient funds have been set aside to do so and, in certain circumstances, Class B Preferred Share dividends cannot be paid unless dividends on our Preferred Shares Series 48, Preferred Shares Series 49 and Preferred Shares Series 51 have been paid.

In addition, if the bank does not pay the interest in full on the AT1 Notes, the bank will not declare dividends on its common shares or preferred shares, or redeem, purchase or otherwise retire such shares, until the month commencing after the bank resumes full interest payments on the AT1 Notes.

Currently, these limitations do not restrict the payment of dividends on common or preferred shares.

## Shareholder Dividend Reinvestment and Share Purchase Plan

We offer a Dividend Reinvestment and Share Purchase Plan (the Plan) for our shareholders. Participation in the Plan is optional. Under the terms of the Plan, cash dividends on common shares are reinvested to purchase additional common shares. Shareholders also have the opportunity to make optional cash payments to acquire additional common shares.

On January 10, 2022, we announced the offering of a 2% discount on the common shares issued from treasury under the dividend reinvestment feature of the Plan. Commencing with the common share dividend declared for the first quarter of fiscal 2022, and subsequently until further notice, common shares under the Plan will be issued by the bank from treasury with a 2% discount, calculated in accordance with the terms of the Plan. The discount will not apply to common shares purchased under the Optional Cash Payment feature of the Plan.

We issued 7,531,233 common shares under the Plan for the year ended October 31, 2022 (nil for the year ended October 31, 2021).

## Potential Share Issuances

As at October 31, 2022, we had reserved 25,669,677 common shares (33,200,910 as at October 31, 2021) for potential issuance in respect of the Plan. We have also reserved 5,976,870 common shares (5,682,206 as at October 31, 2021) for the potential exercise of stock options, as further described in Note 20.

# Note 17: Fair Value of Financial Instruments and Trading-Related Revenue

We record assets and liabilities held for trading, assets and liabilities designated at fair value, derivatives, certain equity and debt securities and securities sold but not yet purchased at fair value, and other non-trading assets and liabilities at amortized cost less allowances or write-downs for impairment. The fair values presented in this note are based upon the amounts estimated for individual assets and liabilities and do not include an estimate of the fair value of any of the legal entities or underlying operations that comprise our business. For certain portfolios of financial instruments where we manage exposures to similar and offsetting risks, fair value is determined on the basis of our net exposure to that risk.

Fair value represents an estimate of the amount that we would receive, or would be payable in the case of a liability, in an orderly transaction between willing parties at the measurement date. The fair value amounts disclosed represent point-in-time estimates that may change in subsequent reporting periods due to changes in market conditions or other factors. Some financial instruments are not typically exchangeable or exchanged and therefore it is difficult to determine their fair value. Where there is no quoted market price, we determine fair value using management's best estimates based on a range of valuation techniques and assumptions; since these involve uncertainties, the fair values may not be realized in an actual sale or immediate settlement of the asset or liability.

## Governance Over the Determination of Fair Value

Senior executive oversight of our valuation processes is provided through various valuation and risk committees. In order to ensure that all financial instruments carried at fair value are reasonably measured for risk management and financial reporting purposes, we have established governance structures and controls, such as model validation and approval, independent price verification (IPV) and profit or loss attribution analysis (PAA), consistent with industry practice. These controls are applied independently of the relevant operating groups.

We establish valuation methodologies for each financial instrument that is required to be measured at fair value. The application of valuation models for products or portfolios is subject to independent approval to ensure only validated models are used. The impact of known limitations of models and data inputs is also monitored on an ongoing basis. IPV is a process that regularly and independently verifies the accuracy and appropriateness of market prices or model inputs used in the valuation of financial instruments. This process assesses fair values using a variety of different approaches to verify and validate the valuations. PAA is a daily process carried out by management to identify and explain changes in fair value positions across all operating lines of business within BMO Capital Markets. This process works in concert with other processes to ensure that the fair values being reported are reasonable and appropriate.

## Securities

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid or ask prices, depending on which is the most appropriate to measure fair value. Securities for which no active market exists are valued using all reasonably available market information. Our fair value methodologies are described below.

*Government Securities*

The fair value of debt securities issued or guaranteed by governments in active markets is determined by reference to recent transaction prices, broker quotes or third-party vendor prices. The fair value of securities that are not traded in an active market is modelled using implied yields derived from the prices of similar actively traded government securities and observable spreads.

*Mortgage-Backed Securities and Collateralized Mortgage Obligations*

The fair value of mortgage-backed securities (MBS) and collateralized mortgage obligations (CMOs) is determined using prices obtained from independent third-party vendors, broker quotes and relevant market indices, as applicable. If such prices are not available, fair value is determined using cash flow models that make maximum use of observable market inputs or benchmark prices for similar instruments. Valuation assumptions for mortgage-backed securities and collateralized mortgage obligations include discount rates, default rates, expected prepayments, credit spreads and recoveries.

*Corporate Debt Securities*

The fair value of corporate debt securities is determined using prices observed in the most recent transactions. When observable quoted prices are not available, fair value is determined based on discounted cash flow models using discounting curves and spreads obtained from independent dealers, brokers and third-party vendors.

*Trading Loans*

The fair value of trading loans is determined by referring to current market prices for the same or similar instruments.

*Corporate Equity Securities*

The fair value of corporate equity securities is based on quoted prices in active markets, where available. Where quoted prices in active markets are not readily available, fair value is determined using either quoted market prices for similar securities or using valuation techniques, which include discounted cash flow analysis and earnings multiples.

*Privately Issued Securities*

Privately issued debt and equity securities are valued using prices observed in recent market transactions, where available. Otherwise, fair value is derived from valuation models using a market or income approach. These models consider various factors, including projected cash flows, earnings, revenue and other third-party evidence, as available. The fair value of our privately issued securities includes net asset values published by third-party fund managers as applicable.

Prices from dealers, brokers and third-party vendors are corroborated as part of our independent review process, which may include using valuation techniques or obtaining consensus or composite prices from other pricing services. We validate the estimates of fair value by independently obtaining multiple quotes for external market prices and input values. We review the approach taken by third-party vendors to ensure that vendors employ a valuation model that maximizes the use of observable inputs such as benchmark yields, bid-ask spreads, underlying collateral, weighted-average terms to maturity and prepayment rate assumptions. Fair value estimates from internal valuation techniques are verified, where possible, by reference to prices obtained from third-party vendors.

## Loans

In determining the fair value of our fixed rate performing loans, other than credit card loans, we discount the remaining contractual cash flows, adjusted for estimated prepayment, at market interest rates currently offered for loans with similar terms and credit risks. For credit card performing loans, fair value is considered to be equal to carrying value, due to their short-term nature.

For floating rate performing loans, changes in interest rates have minimal impact on fair value since interest rates are repriced or reset frequently. On that basis, fair value is assumed to be equal to carrying value.

The fair value of loans is not adjusted for the value of any credit protection purchased to mitigate credit risk.

## Derivative Instruments

A number of valuation techniques are employed to estimate fair value, including discounted cash flow analysis, the Black-Scholes model, Monte Carlo simulation and other accepted market models. These independently validated models incorporate current market data for interest rates, foreign currency exchange rates, equity and commodity prices and indices, credit spreads, recovery rates, corresponding market volatility levels, spot prices, correlation levels and other market-based pricing factors. Option implied volatilities, an input into many valuation models, are either obtained directly from market sources or calculated from market prices. Multi-contributor pricing sources are used wherever possible.

In determining the fair value of complex and customized derivatives, we consider all reasonably available information, including dealer and broker quotes, multi-contributor pricing sources and any relevant observable market inputs. Our models calculate fair value based on inputs specific to the type of contract, which may include stock prices, correlation for multiple assets, interest rates, foreign currency exchange rates, yield curves and volatilities.

We calculate a credit valuation adjustment (CVA) to recognize the credit risk that the bank's counterparty may not ultimately be able to fulfill its derivative obligations. The CVA is derived from market-observed credit spreads or proxy credit spreads and our assessment of the net counterparty credit risk exposure, taking into account credit mitigants such as collateral, master netting agreements and novation to central counterparties. We also calculate a funding valuation adjustment (FVA) to recognize the implicit funding costs associated with over-the-counter derivative positions. The FVA is determined by reference to our own funding spreads.

## Deposits

In determining the fair value of our deposits, we incorporate the following assumptions:

- For fixed rate, fixed maturity deposits, we discount the remaining contractual cash flows related to these deposits, adjusted for expected redemptions, at market interest rates currently offered for deposits with similar terms and risks. The fair value of our senior note liabilities and covered bonds is determined by referring to current market prices for similar instruments or using valuation techniques, such as discounted cash flow models that use market interest rate yield curves and funding spreads.
- For fixed rate deposits with no defined maturities, we consider fair value to equal carrying value, since carrying value is equivalent to the amount payable on the reporting date.
- For floating rate deposits, changes in interest rates have minimal impact on fair value, since deposits reprice to market frequently. On that basis, fair value is considered to equal carrying value.

Certain of our structured note liabilities that have coupons or repayment terms linked to the performance of interest rates, foreign currencies, commodities or equity securities have been designated at fair value through profit or loss. The fair value of these structured notes is estimated using internally validated valuation models and incorporates observable market prices for identical or comparable securities, as well as other inputs, such as interest rate yield curves, option volatilities and foreign exchange rates, where appropriate. Where observable prices or inputs are not available, management judgment is required to determine the fair value by assessing other relevant sources of information, such as historical data and proxy information from similar transactions.

## Securities Sold But Not Yet Purchased

The fair value of these obligations is based on the fair value of the underlying securities, which can be equity or debt securities. As these obligations are fully collateralized, the method used to determine fair value would be the same as that used for the relevant underlying equity or debt securities.

## Securitization and Structured Entities' Liabilities

The determination of the fair value of our securitization and structured entities' liabilities is based on quoted market prices or quoted market prices for similar financial instruments, where available. Where quoted prices are not available, fair value is determined using valuation techniques, such as discounted cash flow models, that maximize the use of observable inputs.

## Subordinated Debt

The fair value of our subordinated debt is determined by referring to current market prices for the same or similar instruments.

## Financial Instruments with a Carrying Value Approximating Fair Value

Carrying value is considered to be a reasonable estimate of fair value for our cash and cash equivalents.

The carrying value of certain financial assets and liabilities, such as interest bearing deposits with banks, securities borrowed or purchased under resale agreements, customers' liability under acceptances, certain other assets, acceptances, securities lent or sold under repurchase agreements and certain other liabilities, is a reasonable estimate of fair value due to their short-term nature or because they are frequently repriced to current market rates. These items are therefore excluded from the table below.

## Fair Value Hierarchy

We use a fair value hierarchy to categorize financial instruments according to the inputs we use in valuation techniques to measure fair value.

## Fair Value of Financial Instruments Not Carried at Fair Value on the Balance Sheet

Set out in the following table are the fair values of financial instruments not carried at fair value in our Consolidated Balance Sheet.

| (Canadian $ in millions) | | **2022** | | 2021 |
|---|---|---|---|---|
| | **Carrying value** | **Fair value** (6) | Carrying value | Fair value (6) |
| **Securities** (1) | | | | |
| Amortized cost | **106,590** | **94,832** | 49,970 | 49,810 |
| **Loans** (1)(2) | | | | |
| Residential mortgages | **148,569** | **142,526** | 135,653 | 135,461 |
| Consumer instalment and other personal | **85,612** | **83,948** | 76,627 | 76,791 |
| Credit cards | **9,387** | **9,387** | 7,827 | 7,827 |
| Business and government | **302,079** | **300,173** | 233,066 | 233,670 |
| | **545,647** | **536,034** | 453,173 | 453,749 |
| **Deposits** (3) | **742,419** | **739,339** | 662,050 | 662,781 |
| **Securitization and structured entities' liabilities** (4) | **25,816** | **24,989** | 24,631 | 24,809 |
| **Other liabilities** (5) | **4,088** | **3,181** | – | – |
| **Subordinated debt** | **8,150** | **7,743** | 6,893 | 7,087 |

(1) Carrying value is net of allowances for credit losses.
(2) Excludes $176 million of residential mortgages classified as FVTPL, $5,496 million of business and government loans classified as FVTPL and $60 million of business and government loans classified as FVOCI ($nil million, $5,022 million and $134 million, respectively, as at October 31, 2021).
(3) Excludes $26,305 million of structured note liabilities ($22,665 million as at October 31, 2021), $536 million of structured deposits ($777 million as at October 31, 2021) and $218 million of metal deposits ($139 million as at October 31, 2021) measured at fair value.
(4) Excludes $1,252 million of securitization and structured entities' liabilities classified as FVTPL ($855 million as at October 31, 2021).
(5) Other liabilities include certain other liabilities of subsidiaries.
(6) If financial instruments not carried at fair value were categorized based on the fair value hierarchy, all of these financial instruments would be categorized as Level 2, except for amortized cost securities, which would have $39,622 million categorized as Level 1 ($14,117 million as at October 31, 2021), and $55,210 million categorized as Level 2 ($35,693 million as at October 31, 2021).

## Valuation Techniques and Significant Inputs

We determine the fair value of publicly traded fixed maturity debt and equity securities using quoted prices in active markets (Level 1) when these are available. When quoted prices in active markets are not available, we determine the fair value of financial instruments using models such as discounted cash flows, with observable market data for inputs, such as yields or broker quotes and other third-party vendor quotes (Level 2). Fair value may also be determined using models where significant market inputs are not observable due to inactive markets or minimal market activity (Level 3). We maximize the use of observable market inputs to the extent possible.

Our Level 2 trading securities are primarily valued using discounted cash flow models with observable spreads or broker quotes. The fair value of Level 2 FVOCI securities is determined using discounted cash flow models with observable spreads or third-party vendor quotes. Level 2 structured note liabilities are valued using models with observable market information. Level 2 derivative assets and liabilities are valued using industry-standard models and observable market information.

The extent of our use of actively quoted market prices (Level 1), internal models using observable market information as inputs (Level 2) and models without observable market information as inputs (Level 3) in the valuation of securities, residential mortgages, business and government loans classified as FVTPL and FVOCI, other assets, fair value liabilities, derivative assets and derivative liabilities is presented in the following table:

| (Canadian $ in millions) | | | 2022 | | | | | 2021 |
|---|---|---|---|---|---|---|---|---|
| | **Valued using quoted market prices** | **Valued using models (with observable inputs)** | **Valued using models (without observable inputs)** | **Total** | Valued using quoted market prices | Valued using models (with observable inputs) | Valued using models (without observable inputs) | Total |
| **Trading Securities** | | | | | | | | |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | **6,981** | **3,955** | **–** | **10,936** | 3,123 | 4,473 | – | 7,596 |
| Canadian provincial and municipal governments | **1,120** | **4,990** | **–** | **6,110** | 2,183 | 3,655 | – | 5,838 |
| U.S. federal government | **7,326** | **9,373** | **–** | **16,699** | 6,050 | 3,532 | – | 9,582 |
| U.S. states, municipalities and agencies | **56** | **83** | **–** | **139** | – | 458 | – | 458 |
| Other governments | **1,085** | **2,885** | **–** | **3,970** | 1,307 | 591 | – | 1,898 |
| NHA MBS, and U.S. agency MBS and CMO | **–** | **13,327** | **985** | **14,312** | – | 13,379 | 675 | 14,054 |
| Corporate debt | **1,445** | **8,144** | **3** | **9,592** | 2,231 | 7,656 | 7 | 9,894 |
| Trading loans | **–** | **346** | **–** | **346** | – | 160 | – | 160 |
| Corporate equity | **46,073** | **–** | **–** | **46,073** | 54,931 | – | – | 54,931 |
| | **64,086** | **43,103** | **988** | **108,177** | 69,825 | 33,904 | 682 | 104,411 |
| **FVTPL Securities** | | | | | | | | |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | **319** | **174** | **–** | **493** | 704 | 159 | – | 863 |
| Canadian provincial and municipal governments | **36** | **1,044** | **–** | **1,080** | 137 | 1,243 | – | 1,380 |
| U.S. federal government | **–** | **4** | **–** | **4** | – | 38 | – | 38 |
| Other governments | **–** | **87** | **–** | **87** | – | 92 | – | 92 |
| NHA MBS, and U.S. agency MBS and CMO | **–** | **8** | **–** | **8** | – | 9 | – | 9 |
| Corporate debt | **62** | **6,409** | **8** | **6,479** | 160 | 7,544 | – | 7,704 |
| Corporate equity | **1,440** | **6** | **4,044** | **5,490** | 1,670 | 12 | 2,442 | 4,124 |
| | **1,857** | **7,732** | **4,052** | **13,641** | 2,671 | 9,097 | 2,442 | 14,210 |
| **FVOCI Securities** | | | | | | | | |
| Issued or guaranteed by: | | | | | | | | |
| Canadian federal government | **3,544** | **8,757** | **–** | **12,301** | 9,138 | 3,927 | – | 13,065 |
| Canadian provincial and municipal governments | **972** | **3,599** | **–** | **4,571** | 1,438 | 1,549 | – | 2,987 |
| U.S. federal government | **1,443** | **1,667** | **–** | **3,110** | 18,873 | 2,153 | – | 21,026 |
| U.S. states, municipalities and agencies | **–** | **3,713** | **1** | **3,714** | – | 4,113 | 1 | 4,114 |
| Other governments | **1,795** | **4,616** | **–** | **6,411** | 2,803 | 3,699 | – | 6,502 |
| NHA MBS, and U.S. agency MBS and CMO | **–** | **9,268** | **–** | **9,268** | – | 12,136 | – | 12,136 |
| Corporate debt | **355** | **3,678** | **–** | **4,033** | 812 | 2,349 | – | 3,161 |
| Corporate equity | **–** | **–** | **153** | **153** | – | – | 132 | 132 |
| | **8,109** | **35,298** | **154** | **43,561** | 33,064 | 29,926 | 133 | 63,123 |
| **Loans** | | | | | | | | |
| Residential mortgages | **–** | **176** | **–** | **176** | – | – | – | – |
| Business and government loans | **–** | **5,536** | **20** | **5,556** | – | 5,150 | 6 | 5,156 |
| | **–** | **5,712** | **20** | **5,732** | – | 5,150 | 6 | 5,156 |
| **Other Assets** (1) | **4,148** | **60** | **49** | **4,257** | 4,392 | 85 | – | 4,477 |
| **Fair Value Liabilities** | | | | | | | | |
| Securities sold but not yet purchased | **18,465** | **22,514** | **–** | **40,979** | 17,424 | 14,649 | – | 32,073 |
| Structured note liabilities (2) | **–** | **26,305** | **–** | **26,305** | – | 22,665 | – | 22,665 |
| Structured deposits (3) | **–** | **536** | **–** | **536** | – | 777 | – | 777 |
| Other liabilities (4) | **1,179** | **2,298** | **2** | **3,479** | 1,106 | 2,125 | – | 3,231 |
| | **19,644** | **51,653** | **2** | **71,299** | 18,530 | 40,216 | – | 58,746 |
| **Derivative Assets** | | | | | | | | |
| Interest rate contracts | **80** | **12,682** | **–** | **12,762** | 6 | 8,066 | – | 8,072 |
| Foreign exchange contracts | **21** | **22,475** | **26** | **22,522** | 3 | 14,982 | – | 14,985 |
| Commodity contracts | **1,514** | **4,810** | **–** | **6,324** | 642 | 6,976 | – | 7,618 |
| Equity contracts | **939** | **5,552** | **–** | **6,491** | 1,381 | 4,657 | – | 6,038 |
| Credit default swaps | **–** | **61** | **–** | **61** | – | – | – | – |
| | **2,554** | **45,580** | **26** | **48,160** | 2,032 | 34,681 | – | 36,713 |
| **Derivative Liabilities** | | | | | | | | |
| Interest rate contracts | **58** | **16,540** | **–** | **16,598** | 6 | 6,773 | – | 6,779 |
| Foreign exchange contracts | **2** | **25,108** | **–** | **25,110** | 4 | 12,451 | – | 12,455 |
| Commodity contracts | **1,523** | **2,066** | **–** | **3,589** | 746 | 1,445 | – | 2,191 |
| Equity contracts | **1,203** | **13,381** | **–** | **14,584** | 1,581 | 7,802 | – | 9,383 |
| Credit default swaps | **–** | **73** | **2** | **75** | – | 5 | 2 | 7 |
| | **2,786** | **57,168** | **2** | **59,956** | 2,337 | 28,476 | 2 | 30,815 |

(1) Other assets include precious metals, segregated fund assets in our insurance business, certain receivables and other items measured at fair value.
(2) These structured note liabilities included in deposits have been designated at FVTPL.
(3) This represents certain embedded options related to structured deposits carried at amortized cost.
(4) Other liabilities include investment contract liabilities and segregated fund liabilities in our insurance business, certain payables and metals deposits that have been designated at FVTPL as well as certain securitization and structured entities' liabilities measured at FVTPL.

## Quantitative Information about Level 3 Fair Value Measurements

The table below presents the fair values of our significant Level 3 financial instruments, the valuation techniques used to determine their fair values and the value ranges of significant unobservable inputs used in the valuations. We have not applied any other reasonably possible alternative assumptions to the significant Level 3 categories of private equity investments, as the net asset values are provided by the investment or fund managers.

| (Canadian $ in millions except as noted) | | | | | | **2022** |
|---|---|---|---|---|---|---|
| | | | | | Range of input values (1) | |
| | Reporting line in fair value hierarchy table | Fair value of assets | Valuation techniques | Significant unobservable inputs | Low | High |
| Private equity (2) | Corporate equity | **4,044** | Net asset value | Net asset value | **na** | **na** |
| | | | EV/EBITDA | Multiple | **5x** | **19x** |
| NHA MBS, U.S. agency MBS and CMO | NHA MBS, U.S. agency MBS and CMO | **985** | Discounted cash flows | Prepayment rate | **3%** | **47%** |
| | | | Market Comparable | Comparability Adjustment (3) | **(3.83)** | **6.82** |
| | | | | | | 2021 |
| Private equity (2) | Corporate equity | 2,442 | Net asset value | Net asset value | na | na |
| | | | EV/EBITDA | Multiple | 6x | 19x |
| NHA MBS, U.S. agency MBS and CMO | NHA MBS, U.S. agency MBS and CMO | 675 | Discounted cash flows | Prepayment rate | 4% | 47% |
| | | | Market Comparable | Comparability Adjustment (3) | (5.56) | 5.85 |

(1) The low and high input values represent the lowest and highest actual level of inputs used to value a group of financial instruments in a particular product category. These input ranges do not reflect the level of input uncertainty but are affected by the specific underlying instruments within each product category. The input ranges will therefore vary from period to period based on the characteristics of the underlying instruments held at each balance sheet date.

(2) Included in private equity is $832 million of U.S. Federal Reserve Bank and U.S. Federal Home Loan Bank shares that we carry at cost ($453 million as at October 31, 2021), which approximates fair value, and are held to meet regulatory requirements.

(3) Range of input values represents price per security adjustment (Canadian $).

na – not applicable

## Significant Unobservable Inputs in Level 3 Instrument Valuations

*Net Asset Value*

Net asset value represents the estimated value of a security based on valuations received from the investment or fund manager. The valuation of certain private equity securities is based on the economic benefit we derive from our investment.

*EV/EBITDA Multiple*

The fair value of private equity and merchant banking investments is derived by calculating an enterprise value (EV) using the EV/EBITDA multiple and then proceeding through a waterfall of the company's capital structure to determine the value of the assets or securities we hold. The EV/EBITDA multiple is determined using judgment in considering factors such as multiples for comparable listed companies, recent transactions and company-specific factors, as well as liquidity discounts that account for the lack of active trading in these assets and securities.

*Prepayment Rates*

Discounted cash flow models are used to fair value our NHA MBS and U.S. agency MBS and CMOs. The cash flow model includes assumptions related to conditional prepayment rates, constant default rates and percentage loss on default. Prepayment rates impact our estimate of future cash flows. Changes in the prepayment rate tend to be negatively correlated with interest rates. In other words, an increase in the prepayment rate will result in a higher fair value when the asset interest rate is lower than the current reinvestment rate. A decrease in the prepayment rate will result in a lower fair value when the asset interest rate is higher than the current reinvestment rate.

*Comparability Adjustment*

Market comparable pricing is used to evaluate the fair value of NHA MBS and U.S. agency MBS and CMOs. This technique involves sourcing prices from third parties for similar instruments and applying adjustments to reflect recent transaction prices and instrument specific characteristics.

*Significant Transfers*

Our policy is to record transfers of assets and liabilities between fair value hierarchy levels at their fair values as at the end of each reporting period, consistent with the date of the determination of fair value. Transfers between the various fair value hierarchy levels reflect changes in the availability of quoted market prices or observable market inputs that result from changes in market conditions. Transfers from Level 1 to Level 2 were due to reduced observability of the inputs used to value the securities. Transfers from Level 2 to Level 1 were due to increased availability of quoted prices in active markets.

The following table presents significant transfers between Level 1 and Level 2 for the years ended October 31, 2022 and October 31, 2021.

| (Canadian $ in millions) | | **2022** | | 2021 |
|---|---|---|---|---|
| | **Level 1 to Level 2** | **Level 2 to Level 1** | Level 1 to Level 2 | Level 2 to Level 1 |
| Trading securities | **10,983** | **13,062** | 7,863 | 11,421 |
| FVTPL securities | **607** | **522** | 871 | 902 |
| FVOCI securities | **16,452** | **11,895** | 11,028 | 13,542 |
| Securities sold but not yet purchased | **9,499** | **14,623** | 7,764 | 5,950 |

Notes

## Changes in Level 3 Fair Value Measurements

The tables below present a reconciliation of all changes in Level 3 financial instruments for the years ended October 31, 2022 and 2021, including realized and unrealized gains (losses) included in earnings and other comprehensive income as well as transfers into and out of Level 3. Transfers from Level 2 to Level 3 were due to an increase in unobservable market inputs used in pricing the securities. Transfers out of Level 3 to Level 2 were due to an increase in observable market inputs used in pricing the securities.

| | | Change in fair value | | Movements | | | Transfers | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| For the year ended October 31, 2022 (Canadian $ in millions) | Balance October 31, 2021 | Included in earnings | Included in other comprehensive income (1) | Purchases/ Issuances | Sales | Maturities/ Settlement | Transfers into Level 3 | Transfers out of Level 3 | Fair value as at October 31, 2022 | Change in unrealized gains (losses) recorded in income for instruments still held (2) |
| **Trading Securities** | | | | | | | | | | |
| NHA MBS and U.S. agency MBS and CMO | 675 | (237) | 76 | 1,045 | (657) | – | 444 | (361) | 985 | (45) |
| Corporate debt | 7 | (2) | (1) | 11 | (5) | – | 2 | (9) | 3 | (1) |
| Total trading securities | 682 | (239) | 75 | 1,056 | (662) | – | 446 | (370) | 988 | (46) |
| **FVTPL Securities** | | | | | | | | | | |
| Corporate debt | – | – | – | 8 | – | – | – | – | 8 | – |
| Corporate equity | 2,442 | 231 | 176 | 1,450 | (321) | – | 66 | – | 4,044 | 274 |
| Total FVTPL securities | 2,442 | 231 | 176 | 1,458 | (321) | – | 66 | – | 4,052 | 274 |
| **FVOCI Securities** | | | | | | | | | | |
| Issued or guaranteed by: U.S. states, municipalities and agencies | 1 | – | – | – | – | – | – | – | 1 | na |
| Corporate equity | 132 | – | 1 | 15 | (1) | – | 6 | – | 153 | na |
| Total FVOCI securities | 133 | – | 1 | 15 | (1) | – | 6 | – | 154 | na |
| **Business and Government Loans** | 6 | – | – | 15 | – | (1) | – | – | 20 | – |
| **Other Assets** | – | – | – | 49 | – | – | – | – | 49 | – |
| **Derivative Assets** | | | | | | | | | | |
| Foreign exchange contracts | – | – | – | 26 | – | – | – | – | 26 | – |
| Total derivative assets | – | – | – | 26 | – | – | – | – | 26 | – |
| **Other Liabilities** | – | – | – | 2 | – | – | – | – | 2 | – |
| **Derivative Liabilities** | | | | | | | | | | |
| Credit default swaps | 2 | – | – | – | – | – | 3 | (3) | 2 | – |
| Total derivative liabilities | 2 | – | – | – | – | – | 3 | (3) | 2 | – |

| | | Change in fair value | | Movements | | | Transfers | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| For the year ended October 31, 2021 (Canadian $ in millions) | Balance October 31, 2020 | Included in earnings | Included in other comprehensive income (1) | Purchases/ Issuances | Sales | Maturities/ Settlement | Transfers into Level 3 | Transfers out of Level 3 | Fair value as at October 31, 2021 | Change in unrealized gains (losses) recorded in income for instruments still held (2) |
| **Trading Securities** | | | | | | | | | | |
| NHA MBS and U.S. agency MBS and CMO | 803 | (222) | (56) | 1,465 | (1,253) | – | 169 | (231) | 675 | 38 |
| Corporate debt | – | – | – | 10 | (3) | – | – | – | 7 | – |
| Total trading securities | 803 | (222) | (56) | 1,475 | (1,256) | – | 169 | (231) | 682 | 38 |
| **FVTPL Securities** | | | | | | | | | | |
| Corporate debt | – | – | – | – | – | – | – | – | – | – |
| Corporate equity | 1,903 | 315 | (92) | 628 | (276) | (4) | – | (32) | 2,442 | 374 |
| Total FVTPL securities | 1,903 | 315 | (92) | 628 | (276) | (4) | – | (32) | 2,442 | 374 |
| **FVOCI Securities** | | | | | | | | | | |
| Issued or guaranteed by: U.S. states, municipalities and agencies | 1 | – | – | – | – | – | – | – | 1 | na |
| Corporate equity | 93 | – | 26 | 13 | – | – | – | – | 132 | na |
| Total FVOCI securities | 94 | – | 26 | 13 | – | – | – | – | 133 | na |
| **Business and Government Loans** | 1,945 | – | (150) | 1,812 | – | (1,302) | – | (2,299) | 6 | – |
| **Other Assets** | – | – | – | – | – | – | – | – | – | – |
| **Derivative Assets** | | | | | | | | | | |
| Foreign exchange contracts | – | – | – | – | – | – | – | – | – | – |
| Total derivative assets | – | – | – | – | – | – | – | – | – | – |
| **Other Liabilities** | – | – | – | – | (13) | – | 13 | – | – | – |
| **Derivative Liabilities** | | | | | | | | | | |
| Credit default swaps | 4 | – | – | – | – | – | – | (2) | 2 | – |
| Total derivative liabilities | 4 | – | – | – | – | – | – | (2) | 2 | – |

(1) Foreign exchange translation on assets and liabilities held by foreign operations is included in other comprehensive income, net foreign operations.
(2) Changes in unrealized gains (losses) on trading and FVTPL securities still held on October 31, 2022 and 2021 are included in earnings for the year.

Unrealized gains (losses) recognized on Level 3 financial instruments may be offset by (losses) gains on economic hedge contracts.

na – not applicable

### Trading-Related Revenue

Trading assets and liabilities, including derivatives, securities and financial instruments designated at FVTPL, are measured at fair value, with gains and losses recognized in trading revenues, non-interest revenue, in our Consolidated Statement of Income. Trading-related revenue includes net interest income and non-interest revenue and excludes underwriting fees and commissions on securities transactions, which are shown separately in our Consolidated Statement of Income. Net interest income arises from interest and dividends related to trading assets and liabilities and is reported net of interest expense associated with funding these assets and liabilities in the following table.

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| Interest rates | **893** | 1,017 |
| Foreign exchange | **571** | 416 |
| Equities | **713** | 567 |
| Commodities | **189** | 147 |
| Other (1) | **7,556** | 2 |
| Total trading-related revenue | **9,922** | 2,149 |
| Reported as: | | |
| Net interest income | **1,672** | 1,853 |
| Non-interest revenue – trading revenues (1) | **8,250** | 296 |
| Total trading-related revenue | **9,922** | 2,149 |

(1) Includes management of fair value changes on the purchase of Bank of the West. Refer to Note 10 for further information.

## Note 18: Offsetting of Financial Assets and Financial Liabilities

Financial assets and financial liabilities are offset and the net amount is reported in our Consolidated Balance Sheet when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the asset and settle the liability simultaneously. The following table presents the amounts that have been offset in our Consolidated Balance Sheet, including securities purchased under resale agreements, securities sold under repurchase agreements and derivative instruments, generally under a market settlement mechanism (e.g. an exchange or clearing house) where simultaneous net settlement can be achieved to eliminate credit and liquidity risk between counterparties. Also presented are amounts not offset in the Consolidated Balance Sheet related to transactions where a master netting agreement or similar arrangement is in place with a right to offset the amounts only in the event of default, insolvency or bankruptcy, or where the offset criteria are otherwise not met.

| (Canadian $ in millions) | | | | | | | **2022** |
|---|---|---|---|---|---|---|---|
| | | | | **Amounts not offset in the balance sheet** | | | |
| | **Gross amounts** | **Amounts offset in the balance sheet** | **Net amounts presented in the balance sheet** | **Impact of master netting agreements** | **Securities received/pledged as collateral** (1)(2) | **Cash collateral** | **Net amount** (3) |
| **Financial Assets** | | | | | | | |
| Securities borrowed or purchased under resale agreements | **116,309** | **3,115** | **113,194** | **11,757** | **99,736** | **4** | **1,697** |
| Derivative instruments | **48,494** | **334** | **48,160** | **31,878** | **3,282** | **3,201** | **9,799** |
| | **164,803** | **3,449** | **161,354** | **43,635** | **103,018** | **3,205** | **11,496** |
| **Financial Liabilities** | | | | | | | |
| Derivative instruments | **60,290** | **334** | **59,956** | **31,878** | **7,212** | **8,843** | **12,023** |
| Securities lent or sold under repurchase agreements | **107,078** | **3,115** | **103,963** | **11,757** | **91,494** | **176** | **536** |
| | **167,368** | **3,449** | **163,919** | **43,635** | **98,706** | **9,019** | **12,559** |
| | | | | | | | 2021 |
| **Financial Assets** | | | | | | | |
| Securities borrowed or purchased under resale agreements | 108,799 | 1,417 | 107,382 | 15,779 | 90,389 | 9 | 1,205 |
| Derivative instruments | 37,054 | 341 | 36,713 | 20,952 | 2,377 | 4,823 | 8,561 |
| | 145,853 | 1,758 | 144,095 | 36,731 | 92,766 | 4,832 | 9,766 |
| **Financial Liabilities** | | | | | | | |
| Derivative instruments | 31,156 | 341 | 30,815 | 20,952 | 1,865 | 1,906 | 6,092 |
| Securities lent or sold under repurchase agreements | 98,973 | 1,417 | 97,556 | 15,779 | 81,411 | 108 | 258 |
| | 130,129 | 1,758 | 128,371 | 36,731 | 83,276 | 2,014 | 6,350 |

(1) Financial assets received/pledged as collateral are disclosed at fair value and are limited to the net balance sheet exposure (i.e. any over-collateralization is excluded from the table).
(2) Certain amounts of collateral are restricted from being sold or repledged except in the event of default or the occurrence of other predetermined events.
(3) Not intended to represent our actual exposure to credit risk.

# Note 19: Capital Management

Our objective is to maintain a strong capital position in a cost-effective structure that: is appropriate given our target regulatory capital ratios and internal assessment of required economic capital; underpins our operating groups' business strategies; supports depositor, investor and regulator confidence while building long-term shareholder value; and is consistent with our target credit ratings.

Our approach includes establishing limits, targets and performance measures that are used to manage balance sheet positions, risk levels and capital requirements, as well as issuing and redeeming capital instruments to achieve a cost-effective capital structure.

Regulatory capital requirements for the bank are determined in accordance with guidelines issued by OSFI, which are based on the Basel III framework developed by the Basel Committee on Banking Supervision. To address the market disruption posed by the pandemic, OSFI announced a suite of modifications to regulatory capital requirements in fiscal 2020, with those that were temporary in nature being unwound during the course of fiscal 2021, except for the temporary exclusion of certain exposures from the Leverage Ratio exposure measures which expired on December 31, 2021. Refer to the Enterprise-Wide Capital Management section of Management's Discussion and Analysis within this report for more details.

Common Equity Tier 1 (CET1) capital is the most permanent form of capital. It is comprised of common shareholders' equity and may include a portion of expected credit loss provisions, less deductions for goodwill, intangible assets and certain other items. Tier 1 capital is primarily comprised of CET1 capital, preferred shares and other equity instruments, less regulatory deductions.

Tier 2 capital is primarily comprised of subordinated debentures and may include a portion of expected credit loss provisions, less regulatory deductions. Total capital includes Tier 1 and Tier 2 capital.

Total Loss-Absorbing Capacity (TLAC) is comprised of Total capital and other TLAC instruments including eligible bail-in debt, less regulatory deductions. Details of the components of our capital position are presented in Notes 11, 12, 15 and 16.

The primary regulatory capital measures are the CET1 Ratio, Tier 1 Capital Ratio, Total Capital Ratio, TLAC Ratio, Leverage Ratio and TLAC Leverage Ratio.

- Regulatory capital ratios are calculated by dividing CET1, Tier 1, Total capital and TLAC by their respective risk-weighted assets.
- The Leverage Ratio is defined as Tier 1 capital divided by leverage exposures, which consist of on-balance sheet items and specified off-balance sheet items, net of specified adjustments. The TLAC Leverage Ratio is defined as TLAC divided by leverage exposures.

As at October 31, 2022, we met OSFI's required target regulatory capital ratios, which include a 2.5% Capital Conservation Buffer, a 1.0% Common Equity Tier 1 Surcharge for domestic systemically important banks, a Countercyclical Buffer and a 2.5% Domestic Stability Buffer.

## Regulatory Capital and Total Loss-Absorbing Capacity Measures, Risk-Weighted Assets and Leverage Exposures (1)

| (Canadian $ in millions, except as noted) | **2022** | 2021 |
|---|---|---|
| CET1 Capital | **60,891** | 44,491 |
| Tier 1 Capital | **67,121** | 49,966 |
| Total Capital | **75,309** | 57,201 |
| Total Loss-Absorbing Capacity (TLAC) | **120,663** | 90,353 |
| Risk-Weighted Assets | **363,997** | 325,433 |
| Leverage Exposures | **1,189,990** | 976,690 |
| CET1 Ratio | **16.7%** | 13.7% |
| Tier 1 Capital Ratio | **18.4%** | 15.4% |
| Total Capital Ratio | **20.7%** | 17.6% |
| TLAC Ratio | **33.1%** | 27.8% |
| Leverage Ratio | **5.6%** | 5.1% |
| TLAC Leverage Ratio | **10.1%** | 9.3% |

(1) Calculated in accordance with OSFI's Capital Adequacy Requirements Guideline, Leverage Requirements Guideline and Total Loss-Absorbing Capacity Guideline, as applicable.

Notes

# Note 20: Employee Compensation – Share-Based Compensation

## Stock Option Plan

We maintain a Stock Option Plan for designated officers and employees. Options are granted at an exercise price equal to the closing price of our common shares on the day before the grant date. Stock options granted vest in equal tranches of 50% on the third and fourth anniversaries of their grant date. Each tranche is treated as a separate award with a different vesting period. In general, options expire 10 years from their grant date.

We determine the fair value of stock options on their grant date and record this amount as compensation expense over the period that the stock options vest, with a corresponding increase to contributed surplus. When these stock options are exercised, we issue shares and record the amount of proceeds, together with the amount recorded in contributed surplus, in share capital. The estimated grant date fair value of stock options granted to employees who are eligible to retire is expensed at the date of grant.

The following table summarizes information about our Stock Option Plan:

| (Canadian $, except as noted) | **2022** | | 2021 | |
|---|---|---|---|---|
| | **Number of stock options** | **Weighted-average exercise price** | Number of stock options | Weighted-average exercise price |
| Outstanding at beginning of year | **5,682,206** | **87.79** | 6,446,110 | 81.50 |
| Granted | **1,028,255** | **135.58** | 984,943 | 97.14 |
| Exercised | **733,591** | **70.64** | 1,630,867 | 67.88 |
| Forfeited/cancelled | **–** | **–** | 117,980 | 97.03 |
| Expired | **–** | **–** | – | – |
| Outstanding at end of year | **5,976,870** | **98.12** | 5,682,206 | 87.79 |
| Exercisable at end of year | **2,648,426** | **84.14** | 2,616,750 | 77.34 |
| Available for grant | **11,680,041** | | 12,708,296 | |

Employee compensation expense related to this plan for the years ended October 31, 2022 and 2021 was $12 million and $10 million, respectively.

Options outstanding and exercisable at October 31, 2022 by range of exercise price were as follows:

| (Canadian $, except as noted) | | | | | **2022** |
|---|---|---|---|---|---|
| | **Options outstanding** | | | **Options exercisable** | |
| Range of exercise prices | **Number of stock options** | **Weighted-average remaining contractual life (years)** | **Weighted-average exercise price** | **Number of stock options** | **Weighted-average exercise price** |
| $60.01 to $70.00 | **674,235** | **0.9** | **66.34** | **674,235** | **66.34** |
| $70.01 to $80.00 | **647,910** | **2.7** | **77.58** | **647,910** | **77.58** |
| $80.01 to $90.00 | **809,181** | **6.1** | **89.90** | **369,978** | **89.90** |
| $90.01 to $100.00 | **1,389,356** | **6.9** | **97.06** | **439,034** | **96.90** |
| $100.01 and over | **2,456,188** | **7.6** | **115.57** | **517,269** | **100.63** |

The following table summarizes additional information about our Stock Option Plan:

| (Canadian $ in millions, except as noted) | **2022** | 2021 |
|---|---|---|
| Unrecognized compensation cost for non-vested stock option awards | **9** | 7 |
| Cash proceeds from stock options exercised | **52** | 111 |
| Weighted-average share price for stock options exercised (in dollars) | **141.50** | 115.42 |

The fair value of options granted was estimated using a binomial option pricing model. The weighted-average fair value of options granted during the years ended October 31, 2022 and 2021 was $14.17 and $10.75, respectively. To determine the fair value of the stock option tranches on the grant date, the following ranges of values were used as inputs for each option pricing assumption:

| | **2022** | 2021 |
|---|---|---|
| Expected dividend yield | **4.2%** | 4.9% |
| Expected share price volatility | **16.8%** | 20.6% – 20.7% |
| Risk-free rate of return | **1.8% – 1.9%** | 1% |
| Expected period until exercise (in years) | **6.5 – 7.0** | 6.5 – 7.0 |

Changes to the input assumptions can result in different fair value estimates.

Expected dividend yield is based on market expectations of future dividends on our common shares. Expected share price volatility is determined based on the market consensus implied volatility for traded options on our common shares. The risk-free rate is based on the yields of a Canadian swap curve with maturities similar to the expected period until exercise of the options. The weighted-average exercise price on the grant date for the years ended October 31, 2022 and 2021 was $135.58 and $97.14, respectively.

## Other Share-Based Compensation

*Share Purchase Plans*

We offer various employee share purchase plans. The largest of these plans provides employees with the option of directing a portion of their gross salary toward the purchase of our common shares. We match 50% of employee contributions up to 6% of their individual gross salary to a maximum of $75,000 ($100,000 prior to December 31, 2020). Our contributions during the first two years vest after two years of participation in the plan, with subsequent contributions vesting immediately. The shares held in the employee share purchase plan are purchased on the open market and are considered outstanding for purposes of computing earnings per share. The dividends earned on our common shares held by the plan are used to purchase additional common shares on the open market.

We account for our contributions as employee compensation expense when they are contributed to the plan.

Employee compensation expense related to these plans for the years ended October 31, 2022 and 2021 was $45 million and $46 million, respectively. There were 17.8 million and 18.0 million common shares held in these plans for the years ended October 31, 2022 and 2021, respectively.

*Compensation Trusts*

We sponsor various share ownership arrangements, certain of which are administered through trusts into which our matching contributions are paid. We are not required to consolidate our compensation trusts.

Total assets held under our share ownership arrangements amounted to $2,239 million as at October 31, 2022 ($2,425 million as at October 31, 2021).

*Mid-Term Incentive Plans*

We offer mid-term incentive plans for executives and certain senior employees. Payment amounts are adjusted to reflect reinvested dividends and changes in the market value of our common shares and the bank's performance relative to certain goals, when applicable. Depending on the plan, the recipient receives either a single cash payment at the end of the three-year period of the plan, or cash payments over the three years of the plan. As the awards are cash-settled, they are recorded as liabilities. Amounts payable under such awards are recorded as compensation expense over the vesting period. Amounts related to units granted to employees who are eligible to retire are expensed at the time of grant. Subsequent changes in the fair value of the liability are recorded in compensation expense in the period in which they arise.

Mid-term incentive plan units granted during the years ended October 31, 2022 and 2021 totalled 5.8 million and 6.4 million, respectively.

The weighted-average fair value of these units granted during the years ended October 31, 2022 and 2021 was $139.04 and $91.62, respectively, and we recorded employee compensation expense of $719 million and $1,234 million, respectively. We hedge the impact of the change in market value of our common shares by entering into total return swaps. We also enter into foreign currency swaps to manage the foreign exchange translation from our U.S. businesses. Gains (losses) on total return swaps and foreign currency swaps recognized for the years ended October 31, 2022 and 2021 were $3 million and $719 million, respectively, resulting in net employee compensation expense of $716 million and $515 million, respectively.

A total of 16.6 million and 17.6 million mid-term incentive plan units were outstanding as at October 31, 2022 and 2021, respectively, and the intrinsic value of those awards which had vested was $1,501 million and $1,679 million, respectively.

*Deferred Incentive Plans*

We offer deferred incentive plans for members of our Board of Directors, executives and key employees in BMO Capital Markets and BMO Wealth Management. Under these plans, fees, annual incentive payments and/or commissions can be deferred as share units of our common shares. These share units are typically either fully vested on the grant date or vest at the end of three years. The value of these share units is adjusted to reflect reinvested dividends and changes in the market value of our common shares.

Deferred incentive plan payments are paid in cash upon the participant's departure from the bank.

Employee compensation expense for these plans is recorded in the year the fees, incentive payments and/or commissions are earned. Changes in the amount of the incentive plan payments as a result of dividends and share price movements are recorded as increases or decreases in employee compensation expense in the period of the change.

Deferred incentive plan units granted during the years ended October 31, 2022 and 2021 totalled 0.2 million and 0.4 million, respectively, and the weighted-average fair value of these units granted during the years ended October 31, 2022 and 2021 was $136.74 and $113.08, respectively.

Liabilities related to these plans are recorded in other liabilities in our Consolidated Balance Sheet and totalled $585 million and $609 million as at October 31, 2022 and 2021, respectively.

Employee compensation expense related to these plans for the years ended October 31, 2022 and 2021 was $(16) million and $279 million, respectively. We have entered into derivative instruments to hedge our exposure related to these plans. Changes in the fair value of these derivatives are recorded as employee compensation expense in the period in which they arise. Gains (losses) on these derivatives recognized for the years ended October 31, 2022 and 2021 were $(30) million and $271 million, respectively. These gains (losses) resulted in net employee compensation expense for the years ended October 31, 2022 and 2021 of $14 million and $8 million, respectively.

A total of 4.7 million and 4.6 million deferred incentive plan units were outstanding as at October 31, 2022 and 2021, respectively.

# Note 21: Employee Compensation – Pension and Other Employee Future Benefits

## Pension and Other Employee Future Benefit Plans

We sponsor a number of arrangements globally that provide pension and other employee future benefits to our retired and current employees. The largest of these arrangements, by defined benefit obligation, are the primary defined benefit pension plans for employees in Canada and the United States and the primary other employee future benefit plan for employees in Canada.

Pension arrangements include defined benefit pension plans, as well as supplementary arrangements that provide pension benefits in excess of statutory limits. Generally, under these plans we provide retirement benefits based on an employee's years of service and average annual earnings over a period of time prior to retirement. Our pension and other employee future benefit expenses, recorded in employee compensation expense, mainly comprise the current service cost plus or minus the interest on net defined benefit assets or liabilities. In addition, we provide defined contribution pension plans to our employees. The costs of these plans, recorded in employee compensation expense, are equal to our contributions to the plans.

Effective December 31, 2020, the primary defined benefit pension plan for employees in Canada was closed to new employees hired after that date. Employees hired or transferred to BMO Canada on or after January 1, 2021 are eligible to participate in a defined contribution pension plan once they have completed the waiting period of six months of continuous service.

We also provide other employee future benefits, including health and dental care benefits and life insurance, for eligible current and retired employees.

Short-term employee benefits, such as salaries, paid absences, bonuses and other benefits, are accounted for on an accrual basis over the period in which the employees provide the related services.

## Investment Policy

The defined benefit pension plans are administered under a defined governance structure, with oversight resting with the Board of Directors.

The plans are managed under a framework that considers both assets and liabilities in the development of an investment policy and in managing risk. Over the past several years, we have implemented a liability-driven investment strategy for the primary Canadian plan to enhance risk-adjusted returns while reducing the plan's surplus volatility. This strategy has reduced the impact of the plan on our regulatory capital.

The plans invest in asset classes that include equities, fixed income and alternative strategies, under established investment guidelines. Plan assets are diversified across asset classes and by geographic exposure. They are managed by asset management firms that are responsible for the selection of investment securities. Derivative instruments are permitted under policy guidelines and are generally used to hedge foreign currency exposures, manage interest rate exposures or replicate the return of an asset.

## Asset Allocations

The asset allocation ranges and weighted-average actual asset allocations of our primary pension plans, based on fair market values at October 31, are as follows:

| | Pension benefit plans | | |
|---|---|---|---|
| | **Target range 2022** | **Actual 2022** | Actual 2021 |
| Equities | **20% – 40%** | **25%** | 30% |
| Fixed income investments | **40% – 55%** | **43%** | 47% |
| Alternative strategies | **15% – 40%** | **32%** | 23% |

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis.

## Risk Management

The defined benefit pension plans are exposed to various risks, including market risk (interest rate, equity and foreign currency risks), credit risk, operational risk, surplus risk and longevity risk. We follow a number of approaches to monitor and actively manage these risks, including:

- monitoring surplus-at-risk, which measures a plan's risk in an asset-liability framework;
- stress testing and scenario analyses to evaluate the volatility of the plans' financial positions and any potential impact on the bank;
- hedging of currency exposures and interest rate risk within policy limits;
- controls related to asset mix allocations, geographic allocations, portfolio duration, credit quality of debt securities, sector guidelines, issuer/counterparty limits and others; and
- ongoing monitoring of exposures, performance and risk levels.

## Pension and Other Employee Future Benefit Liabilities

Our actuaries perform valuations of our defined benefit obligations for pension and other employee future benefits as at October 31 of each year using the projected unit credit method based on management's assumptions about discount rates, rates of compensation increase, retirement age, mortality and health care cost trend rates.

The discount rates for the primary Canadian and U.S. pension and other employee future benefit plans were selected based on the yields of high-quality AA rated corporate bonds with terms matching the plans' cash flows.

The fair value of plan assets is deducted from the defined benefit obligation to determine the net defined benefit asset or liability. For defined benefit pension plans that are in a net defined benefit asset position, the recognized asset is limited to the present value of economic benefits available in the form of future refunds from the plan or reductions in future contributions to the plan (the asset ceiling). Changes in the asset ceiling are recognized in other comprehensive income. Components of the change in our net defined benefit assets or liabilities and our pension and other employee future benefit expenses are as follows:

**Current service cost** represents benefits earned in the current year. The cost is determined with reference to the current workforce and the amount of benefits to which employees will be entitled upon retirement, based on the provisions of our benefit plans.

**Interest on net defined benefit asset or liability** represents the increase in the net defined benefit asset or liability that results from the passage of time and is determined by applying the discount rate to the net defined benefit asset or liability.

**Actuarial gains and losses** may arise in two ways. First, each year our actuaries recalculate the defined benefit obligations and compare them to those estimated as at the previous year end. Any differences that result from changes in demographic and economic assumptions or from plan member experience being different from management's expectations at the previous year end are considered actuarial gains or losses. Second, actuarial gains and losses arise when there are differences between the discount rate and actual returns on plan assets. Actuarial gains and losses are recognized immediately in other comprehensive income as they occur and are not subsequently reclassified to income in future periods.

**Plan amendments** are changes in our defined benefit obligations that result from changes to provisions of the plans. The effects of plan amendments are recognized immediately in income when a plan is amended.

**Settlements** occur when defined benefit obligations for plan participants are settled, usually through lump sum cash payments, and as a result we no longer have any obligation to provide such participants with benefit payments in the future.

## Funding of Pension and Other Employee Future Benefit Plans

We fund our defined benefit pension plans in Canada and the United States in accordance with statutory requirements, and the assets in these plans are used to pay benefits to retirees and other employees. Some groups of employees are also eligible to make voluntary contributions in order to receive enhanced benefits. Our supplementary pension plan in Canada is funded, while the supplementary pension plan in the U.S. is unfunded.

Our other employee future benefit plans in Canada and the United States are either funded or unfunded. Benefit payments related to these plans are paid either through the respective plan or directly by us.

We measure the fair value of plan assets for our plans in Canada and the United States as at October 31. In addition to actuarial valuations for accounting purposes, we are required to prepare valuations for determining our minimum funding requirements for our pension arrangements in accordance with the relevant statutory framework (our funding valuation). An annual funding valuation is performed for our plans in Canada and the United States. The most recent funding valuation for our primary Canadian pension plan was performed as at October 31, 2022 and the most recent funding valuation for our primary U.S. pension plan was performed as at January 1, 2021.

A summary of plan information for the past two years is as follows:

| (Canadian $ in millions) | Pension benefit plans | | Other employee future benefit plans | |
|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 |
| Defined benefit obligation | **7,082** | 9,716 | **928** | 1,220 |
| Fair value of plan assets | **8,261** | 10,525 | **147** | 166 |
| Surplus (deficit) and net defined benefit asset (liability) | **1,179** | 809 | **(781)** | (1,054) |
| Surplus (deficit) is comprised of: | | | | |
| Funded or partially funded plans | **1,267** | 939 | **51** | 40 |
| Unfunded plans | **(88)** | (130) | **(832)** | (1,094) |
| Surplus (deficit) and net defined benefit asset (liability) | **1,179** | 809 | **(781)** | (1,054) |

## Pension and Other Employee Future Benefit Expenses

Pension and other employee future benefit expenses are determined as follows:

| (Canadian $ in millions) | Pension benefit plans | | Other employee future benefit plans | |
|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 |
| **Annual benefits expense** | | | | |
| Current service cost | **237** | 268 | **8** | 9 |
| Net interest (income) expense on net defined benefit (asset) liability | **(27)** | 7 | **35** | 30 |
| Past service cost (income) | **(2)** | – | **–** | – |
| Gain on settlement | **(1)** | – | **–** | – |
| Administrative expenses | **4** | 5 | **–** | – |
| Remeasurement of other long-term benefits | **–** | – | **(18)** | (11) |
| Benefits expense | **211** | 280 | **25** | 28 |
| Government pension plans expense (1) | **252** | 216 | **–** | – |
| Defined contribution expense | **176** | 160 | **–** | – |
| Total annual pension and other employee future benefit expenses recognized in the Consolidated Statement of Income | **639** | 656 | **25** | 28 |

1) Includes Canada Pension Plan, Quebec Pension Plan and U.S. Federal Insurance Contribution Act.

Certain comparative figures have been reclassified to conform with the current year's presentation.

## Weighted-Average Assumptions

| | Pension benefit plans | | Other employee future benefit plans | |
|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 |
| **Defined Benefit Expenses** | | | | |
| Discount rate at beginning of year (1)(2) | **3.2%** | 2.7% | **3.3%** | 2.7% |
| Rate of compensation increase | **2.2%** | 2.1% | **na** | 2.0% |
| Assumed overall health care cost trend rate | **na** | na | **4.8%** (3) | 4.8% (3) |
| **Defined Benefit Obligation** | | | | |
| Discount rate at end of year | **5.5%** | 3.2% | **5.5%** | 3.3% |
| Rate of compensation increase | **2.3%** | 2.2% | **na** | na (4) |
| Assumed overall health care cost trend rate | **na** | na | **4.7%** (3) | 4.8% (3) |

(1) The pension benefit current service cost was calculated using a separate discount rate of 3.7% and 3.0% for 2022 and 2021, respectively.
(2) The other employee future benefit plans current service cost was calculated using a separate discount rate of 3.6% and 3.0% for 2022 and 2021, respectively.
(3) Trending to 4.0% in 2041 and remaining at that level thereafter.
(4) Rate of compensation increase is not applicable, since the new flat dollar retiree plan benefit is no longer dependent on compensation.

na – not applicable

Assumptions regarding future mortality are based on published statistics and mortality tables calibrated to plan experience, when applicable. The current life expectancies underlying the amounts of the defined benefit obligations for our primary plans are as follows:

| (Years) | Canada | | United States | |
|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 |
| **Life expectancy for those currently age 65** | | | | |
| Males | **23.9** | 23.8 | **21.8** | 21.8 |
| Females | **24.2** | 24.2 | **23.2** | 23.2 |
| **Life expectancy at age 65 for those currently age 45** | | | | |
| Males | **24.8** | 24.8 | **23.0** | 23.0 |
| Females | **25.1** | 25.1 | **24.4** | 24.4 |

Changes in the estimated financial positions of our defined benefit pension plans and other employee future benefit plans are as follows:

| (Canadian $ in millions, except as noted) | Pension benefit plans | | Other employee future benefit plans | |
|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 |
| **Defined benefit obligation** | | | | |
| Defined benefit obligation at beginning of year | **9,716** | 10,493 | **1,220** | 1,290 |
| Divestiture of defined benefit obligation (1) | **(532)** | – | **–** | – |
| Current service cost | **237** | 268 | **8** | 9 |
| Interest cost | **290** | 269 | **39** | 34 |
| Past service (income) | **(2)** | – | **–** | – |
| (Gain) on settlements | **(1)** | – | **–** | – |
| Benefits paid | **(578)** | (525) | **(49)** | (50) |
| Employee contributions | **18** | 17 | **6** | 5 |
| Actuarial (gains) losses due to: | | | | |
| Changes in demographic assumptions | **–** | 11 | **(60)** | (4) |
| Changes in financial assumptions | **(2,386)** | (700) | **(244)** | (89) |
| Plan member experience | **207** | 29 | **(9)** | 39 |
| Foreign exchange and other | **113** | (146) | **17** | (14) |
| Defined benefit obligation at end of year | **7,082** | 9,716 | **928** | 1,220 |
| Wholly or partially funded defined benefit obligation | **6,994** | 9,586 | **96** | 126 |
| Unfunded defined benefit obligation | **88** | 130 | **832** | 1,094 |
| Total defined benefit obligation | **7,082** | 9,716 | **928** | 1,220 |
| **Fair value of plan assets** | | | | |
| Fair value of plan assets at beginning of year | **10,525** | 10,064 | **166** | 181 |
| Divestiture of plan assets (1) | **(647)** | – | **–** | – |
| Interest income | **317** | 262 | **4** | 4 |
| Return on plan assets (excluding interest income) | **(1,524)** | 542 | **(37)** | (1) |
| Employer contributions | **58** | 298 | **40** | 40 |
| Employee contributions | **18** | 17 | **6** | 5 |
| Benefits paid | **(578)** | (525) | **(49)** | (50) |
| Administrative expenses | **(4)** | (5) | **–** | – |
| Foreign exchange and other | **96** | (128) | **17** | (13) |
| Fair value of plan assets at end of year | **8,261** | 10,525 | **147** | 166 |
| Surplus (Deficit) and net defined benefit asset (liability) at end of year | **1,179** | 809 | **(781)** | (1,054) |
| **Recorded in:** | | | | |
| Other assets | **1,267** | 947 | **51** | 40 |
| Other liabilities | **(88)** | (138) | **(832)** | (1,094) |
| Surplus (Deficit) and net defined benefit asset (liability) at end of year | **1,179** | 809 | **(781)** | (1,054) |
| **Actuarial gains (losses) recognized in other comprehensive income** | | | | |
| Net actuarial gains (losses) on plan assets | **(1,524)** | 542 | **(37)** | (1) |
| Actuarial gains (losses) on defined benefit obligation due to: | | | | |
| Changes in demographic assumptions | **–** | (11) | **56** | 4 |
| Changes in financial assumptions | **2,386** | 700 | **228** | 84 |
| Plan member experience | **(207)** | (29) | **10** | (45) |
| Foreign exchange and other | **(14)** | 20 | **–** | – |
| **Actuarial gains recognized in other comprehensive income for the year** | **641** | 1,222 | **257** | 42 |

(1) Relates to the defined benefit plan included in the sale of our EMEA Asset Management business in fiscal 2022. Refer to Note 10 for further information.

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis. The fair values of plan assets held by our primary plans as at October 31, 2022 and 2021 are as follows:

| (Canadian $ in millions) | | | 2022 | | | 2021 |
|---|---|---|---|---|---|---|
| | **Quoted** | **Unquoted** | **Total** | Quoted | Unquoted | Total |
| Cash and money market funds | **185** | **–** | **185** | 144 | 1 | 145 |
| Securities issued or guaranteed by: | | | | | | |
| Canadian federal government | **11** | **41** | **52** | 26 | 41 | 67 |
| Canadian provincial and municipal governments | **156** | **303** | **459** | 191 | 364 | 555 |
| U.S. federal government | **108** | **–** | **108** | 297 | 4 | 301 |
| Pooled funds | **704** | **4,034** | **4,738** | 1,071 | 4,014 | 5,085 |
| Derivative instruments | **–** | **(53)** | **(53)** | – | 43 | 43 |
| Corporate debt | **–** | **1,157** | **1,157** | 3 | 1,391 | 1,394 |
| Corporate equity | **1,187** | **–** | **1,187** | 1,655 | – | 1,655 |
| | **2,351** | **5,482** | **7,833** | 3,387 | 5,858 | 9,245 |

No plan assets are directly invested in the bank's or related parties' securities as at October 31, 2022 and 2021. As at October 31, 2022 our primary Canadian plan indirectly held, through pooled funds, less than $1 million ($11 million as at October 31, 2021) of our common shares and fixed income securities. The plans do not hold any property we occupy or other assets we use.

## Sensitivity of Assumptions

Key weighted-average assumptions for 2022 used in measuring the defined benefit obligations for our primary plans are outlined in the following table. The sensitivity analysis provided in the table should be used with caution, as it is hypothetical and the impact of changes in each key assumption may not be linear. The sensitivities to changes in each key variable have been calculated independently of the impact of changes in other key variables. Actual experience may result in simultaneous changes in a number of key assumptions, which would amplify or reduce certain sensitivities.

| | Defined benefit obligation | |
|---|---|---|
| (Canadian $ in millions, except as noted) | Pension benefit plans | Other employee future benefit plans |
| Discount rate (%) | 5.5 | 5.5 |
| Impact of: 1% increase ($) | (681) | (69) |
| 1% decrease ($) | 836 | 85 |
| Rate of compensation increase (%) | 2.3 | na |
| Impact of: 0.25% increase ($) | 30 | na |
| 0.25% decrease ($) | (29) | na |
| Mortality | | |
| Impact of: 1 year shorter life expectancy ($) | (119) | (17) |
| 1 year longer life expectancy ($) | 116 | 17 |
| Assumed overall health care cost trend rate (%) | na | 4.7 (1) |
| Impact of: 1% increase ($) | na | 35 |
| 1% decrease ($) | na | (31) |

(1) Trending to 4.00% in 2041 and remaining at that level thereafter.

na – not applicable

## Maturity Profile

The duration of the defined benefit obligation for our primary plans is as follows:

| (Years) | **2022** | 2021 |
|---|---|---|
| Canadian pension plans | **12.1** | 14.5 |
| U.S. pension plans | **7.5** | 9.5 |
| Canadian other employee future benefit plans | **12.5** | 13.7 |

## Cash Flows

Cash payments we made during the year in connection with our employee future benefit plans are as follows:

| (Canadian $ in millions) | Pension benefit plans | | Other employee future benefit plans | |
|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 |
| Contributions to defined benefit plans | **24** | 254 | **–** | – |
| Contributions to defined contribution plans | **176** | 160 | **–** | – |
| Benefits paid directly to pensioners | **34** | 44 | **40** | 40 |
| | **234** | 458 | **40** | 40 |

Our best estimate of the contributions and benefits paid directly to pensioners we expect to make for the year ending October 31, 2023 is approximately $69 million for our defined benefit pension plans and $46 million for our other employee future benefit plans. Benefit payments from our defined benefit plans to retirees for the year ending October 31, 2023 are estimated to be $520 million.

# Note 22: Income Taxes

We report our provision for income taxes in our Consolidated Statement of Income based upon transactions recorded in our consolidated financial statements regardless of when they are recognized for income tax purposes, with the exception of repatriation of retained earnings from our subsidiaries, as noted below.

In addition, we record an income tax expense or benefit in other comprehensive income or directly in equity when the taxes relate to amounts recorded in other comprehensive income or equity. For example, income tax expense (recovery) on hedging gains (losses) related to our net investment in foreign operations is recorded in our Consolidated Statement of Comprehensive Income as part of net gains (losses) on translation of net foreign operations.

Current tax is the amount of income tax recoverable (payable) in respect of the taxable loss (profit) for a period. Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities for accounting and tax purposes. Deferred tax assets and liabilities are measured at the tax rates expected to apply when temporary differences reverse. Changes in deferred tax assets and liabilities related to a change in tax rates are recorded in income in the period the tax rate is substantively enacted, except to the extent that the tax arises from a transaction or event which is recognized either in other comprehensive income or directly in equity. Current and deferred taxes are offset only when they are levied by the same tax authority, on the same entity or group of entities, and when there is a legal right to offset.

Included in deferred tax assets is $10 million ($9 million as at October 31, 2021) related to both U.S. tax loss carryforwards and tax credits that will expire in various amounts in U.S. taxation years from 2022 through 2040. On the evidence available, including management projections of income, we believe it is probable that there will be sufficient taxable income generated by our business operations to support these deferred tax assets. The amount of tax on temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in our Consolidated Balance Sheet as at October 31, 2022 is $922 million ($118 million in 2021), of which $36 million ($7 million in 2021) is scheduled to expire within five years. Deferred tax assets have not been recognized in respect of these items because it is not probable that these assets will be realized.

Income that we earn through our foreign subsidiaries is generally taxed in the foreign country in which they operate. Income that we earn through our foreign branches is also generally taxed in the foreign country in which they operate. Canada also taxes the income we earn through foreign branches and a credit is allowed for certain foreign taxes paid on such income. Repatriation of earnings from certain foreign subsidiaries would require us to pay tax on certain of these earnings. As repatriation of such earnings is not planned in the foreseeable future, we have not recorded a related deferred tax liability. The taxable temporary differences associated with the repatriation of earnings from investments in certain subsidiaries, branches, associates and interests in joint ventures for which deferred tax liabilities have not been recognized totalled $24 billion as at October 31, 2022 ($17 billion in 2021).

## Provision for Income Taxes

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| **Consolidated Statement of Income** | | |
| Current | | |
| Provision for income taxes for the current period | **3,889** | 2,334 |
| Adjustments for prior periods | **(15)** | (14) |
| Deferred | | |
| Origination and reversal of temporary differences | **475** | 173 |
| Effect of changes in tax rates | **–** | 11 |
| | **4,349** | 2,504 |
| **Other Comprehensive Income and Equity** | | |
| Income tax expense (recovery) related to: | | |
| Unrealized (losses) on FVOCI debt securities | **(182)** | (58) |
| Reclassification to earnings of (gains) on FVOCI debt securities | **(5)** | (14) |
| (Losses) on derivatives designated as cash flow hedges | **(1,794)** | (504) |
| Reclassification to earnings of (gains) on derivatives designated as cash flow hedges | **(114)** | (149) |
| Unrealized gains (losses) on hedges of net foreign operations | **(124)** | 180 |
| Gains on remeasurement of pension and other employee future benefit plans | **239** | 341 |
| Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value | **465** | (70) |
| Unrealized gains on FVOCI equity securities | **1** | 6 |
| Share-based compensation | **5** | (10) |
| | **(1,509)** | (278) |
| Total provision for income taxes | **2,840** | 2,226 |

Notes

**Components of Total Provision for Income Taxes**

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| Canada: Current taxes | | |
| Federal | **1,178** | 650 |
| Provincial | **672** | 373 |
| | **1,850** | 1,023 |
| Canada: Deferred taxes | | |
| Federal | **148** | 233 |
| Provincial | **85** | 134 |
| | **233** | 367 |
| Total Canadian | **2,083** | 1,390 |
| Foreign: Current taxes | **953** | 940 |
| Deferred taxes | **(196)** | (104) |
| Total foreign | **757** | 836 |
| Total provision for income taxes | **2,840** | 2,226 |

## Reconciliation to Statutory Tax Rate

Set out below is a reconciliation of our statutory tax rates and income taxes that would be payable at these rates to the effective tax rates and provision for income taxes that we have recorded in our Consolidated Statement of Income:

| (Canadian $ in millions, except as noted) | 2022 | | 2021 | |
|---|---|---|---|---|
| Combined Canadian federal and provincial income taxes at the statutory tax rate | **4,757** | **26.6%** | 2,729 | 26.6% |
| Increase (decrease) resulting from: | | | | |
| Tax-exempt income from securities | **(200)** | **(1.1)** | (232) | (2.3) |
| Foreign operations subject to different tax rates | **(160)** | **(0.9)** | (137) | (1.3) |
| Write-down of goodwill | **–** | **–** | 202 | 2.0 |
| Change in tax rate for deferred taxes | **–** | **–** | 11 | 0.1 |
| Income attributable to investments in associates and joint ventures | **(57)** | **(0.3)** | (56) | (0.6) |
| Other | **9** | **–** | (13) | (0.1) |
| Provision for income taxes in the Consolidated Statement of Income and effective tax rate | **4,349** | **24.3%** | 2,504 | 24.4% |

## Components of Deferred Tax Balances

(Canadian $ in millions)

| Deferred Tax Asset (Liability) | Net asset, October 31, 2021 | **Benefit (expense) to income statement** | **Benefit (expense) to equity** | **Translation and other** | **Net asset, October 31, 2022** |
|---|---|---|---|---|---|
| Allowance for credit losses | 651 | **(52)** | **–** | **6** | **605** |
| Employee future benefits | 330 | **(10)** | **(65)** | **1** | **256** |
| Deferred compensation benefits | 685 | **18** | **–** | **5** | **708** |
| Other comprehensive income | (108) | **(1)** | **682** | **–** | **573** |
| Tax loss carryforwards | 34 | **(23)** | **–** | **–** | **11** |
| Tax credits | – | **–** | **–** | **–** | **–** |
| Premises and equipment | (400) | **(59)** | **–** | **(1)** | **(460)** |
| Pension benefits | (148) | **(47)** | **(174)** | **(1)** | **(370)** |
| Goodwill and intangible assets | (241) | **1** | **–** | **(4)** | **(244)** |
| Securities | (51) | **193** | **–** | **–** | **142** |
| Other (1) | 343 | **(495)** | **(5)** | **9** | **(148)** |
| Net deferred tax assets (liabilities) | 1,095 | **(475)** | **438** | **15** | **1,073** |
| **Comprising** | | | | | |
| Deferred tax assets | 1,287 | | | | **1,175** |
| Deferred tax liabilities | (192) | | | | **(102)** |
| Net deferred tax assets (liabilities) | 1,095 | **–** | **–** | **–** | **1,073** |

(Canadian $ in millions)

| Deferred Tax Asset (Liability) | Net asset, November 1, 2020 | Benefit (expense) to income statement | Benefit (expense) to equity | Translation and other | Net asset, October 31, 2021 |
|---|---|---|---|---|---|
| Allowance for credit losses | 849 | (194) | – | (4) | 651 |
| Employee future benefits | 337 | 2 | (9) | – | 330 |
| Deferred compensation benefits | 416 | 270 | – | (1) | 685 |
| Other comprehensive income | (358) | – | 250 | – | (108) |
| Tax loss carryforwards | 87 | (53) | – | – | 34 |
| Tax credits | 31 | (31) | – | – | – |
| Premises and equipment | (361) | (39) | – | – | (400) |
| Pension benefits | 78 | 104 | (330) | – | (148) |
| Goodwill and intangible assets | (237) | (6) | – | 2 | (241) |
| Securities | 11 | (62) | – | – | (51) |
| Other | 512 | (175) | 10 | (4) | 343 |
| Net deferred tax assets (liabilities) | 1,365 | (184) | (79) | (7) | 1,095 |
| **Comprising** | | | | | |
| Deferred tax assets | 1,473 | | | | 1,287 |
| Deferred tax liabilities | (108) | | | | (192) |
| Net deferred tax assets (liabilities) | 1,365 | – | – | – | 1,095 |

(1) Includes the tax impact of the interest rate swaps and securities we purchased to mitigate the impact of changes in interest rates on our announced acquisition of Bank of the West (refer to Note 10 for additional details) and the tax impact of the legal provision recorded in relation to the lawsuit described in Note 24.

Notes

Canadian tax authorities have reassessed us for additional income tax and interest in an amount of approximately $1,425 million, to date, in respect of certain 2011 – 2017 Canadian corporate dividends. Those reassessments denied certain dividend deductions on the basis that the dividends were received as part of a "dividend rental arrangement". In general, the tax rules raised by the Canadian tax authorities were prospectively addressed in the 2015 and 2018 Canadian Federal Budgets. We filed Notices of Appeal with the Tax Court of Canada and the matter is in litigation. We expect to be reassessed for income tax in respect of similar activities undertaken in 2018. We remain of the view that our tax filing positions were appropriate and intend to challenge all reassessments. However, if such challenges are unsuccessful, the additional expense would negatively impact our net income.

## Note 23: Earnings Per Share

Basic earnings per share is calculated by dividing net income, after deducting dividends payable on preferred shares and distributions payable on other equity instruments, by the daily average number of fully paid common shares outstanding throughout the year.

Diluted earnings per share is calculated in the same manner, with further adjustments made to reflect the dilutive impact of instruments convertible into our common shares.

The following table presents our basic and diluted earnings per share:

| Basic Earnings Per Common Share (Canadian $ in millions, except as noted) | 2022 | 2021 |
|---|---|---|
| Net income | **13,537** | 7,754 |
| Dividends on preferred shares and distributions on other equity instruments | **(231)** | (244) |
| Net income available to common shareholders | **13,306** | 7,510 |
| Weighted-average number of common shares outstanding (in thousands) | **663,990** | 647,163 |
| Basic earnings per common share (Canadian $) | **20.04** | 11.60 |
| **Diluted Earnings Per Common Share** | | |
| Net income available to common shareholders adjusted for impact of dilutive instruments | **13,306** | 7,510 |
| Weighted-average number of common shares outstanding (in thousands) | **663,990** | 647,163 |
| Effect of dilutive instruments | | |
| Stock options potentially exercisable (1) | **5,178** | 6,403 |
| Common shares potentially repurchased | **(3,461)** | (4,890) |
| Weighted-average number of diluted common shares outstanding (in thousands) | **665,707** | 648,676 |
| Diluted earnings per common share (Canadian $) | **19.99** | 11.58 |

(1) In computing diluted earnings per share, we excluded average stock options outstanding of 943,741 with a weighted-average exercise price of $143.52 for the year ended October 31, 2022. For the year ended October 31, 2021, we did not exclude any stock options outstanding as the average share price for the year exceeded the exercise price.

## Note 24: Commitments, Guarantees, Pledged Assets, Provisions and Contingent Liabilities

In the normal course of business, we enter into a variety of contracts under which we may be required to make payments to reimburse a counterparty for a loss if a third party does not perform according to the terms of a contract or does not make payments when due under the terms of a debt instrument, and contracts under which we provide indirect guarantees of the indebtedness of another party, all of which are considered guarantees.

Guarantees that qualify as derivatives are accounted for in accordance with the policy for derivative instruments (refer to Note 8). For guarantees that do not qualify as derivatives, the liability is initially recorded at fair value, which is generally the fee received. Subsequently, guarantees are recorded at the higher of the initial fair value, less amortization to recognize any fee income earned over the period, and our best estimate of the amount required to settle the obligation. Any change in the liability is reported in our Consolidated Statement of Income.

We enter into a variety of commitments, including off-balance sheet credit instruments, such as backstop liquidity facilities, letters of credit, credit default swaps and commitments to extend credit, as a method of meeting the financial needs of our customers. These commitments include contracts where we may be required to make payments to a counterparty, based on changes in the value of an asset, liability or equity security that the counterparty holds, due to changes in an underlying interest rate, foreign exchange rate or other variable. The contractual amount of our commitments represents our maximum undiscounted potential exposure, before possible recoveries under recourse and collateral provisions. Collateral requirements for these instruments are consistent with our collateral requirements for loans.

A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

We strive to limit credit risk by dealing only with counterparties that we believe are creditworthy, and we manage our credit risk for these instruments using the same credit risk process that is applied to loans and other credit assets.

We also previously facilitated securities lending transactions for our customers but we divested this business in fiscal 2022.

The maximum amount payable related to our various commitments is as follows:

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| **Financial Guarantees** | | |
| Standby letters of credit | **26,019** | 22,165 |
| Credit default swaps (1) | **11,099** | 5,158 |
| **Other Credit Instruments** | | |
| Backstop liquidity facilities | **17,330** | 12,895 |
| Securities lending (2) | **–** | 3,909 |
| Documentary and commercial letters of credit | **1,351** | 1,481 |
| Commitments to extend credit (3) | **200,814** | 174,327 |
| Other commitments (4) | **7,075** | 8,070 |
| Total | **263,688** | 228,005 |

(1) The fair value of the related derivatives included in our Consolidated Balance Sheet was $(38) million as at October 31, 2022 ($(4) million as at October 31, 2021).
(2) In fiscal 2022, we divested the securities lending agency business.
(3) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at our discretion.
(4) Other commitments include $783 million as at October 31, 2022 ($1,649 million as at October 31, 2021) of underwriting commitments that are extended but not yet accepted by the borrower.

## Financial Guarantees

Standby letters of credit represent our obligation to make payments to third parties on behalf of customers if they are unable to make the required payments or meet other contractual requirements. The majority have a term of one year or less. Collateral requirements for standby letters of credit and guarantees are consistent with our collateral requirements for loans. Standby letters of credit and guarantees include our guarantee of a subsidiary's debt provided directly to a third party.

Written credit default swaps require us to compensate a counterparty following the occurrence of a credit event in relation to a specified reference obligation, such as a bond or a loan. The terms of these contracts range from less than 1 year to over 10 years. Refer to Note 8 for details.

## Other Credit Instruments

Backstop liquidity facilities are provided to ABCP programs administered by us as an alternative source of financing when ABCP markets cannot be accessed. The terms of the backstop liquidity facilities do not require us to advance money to these programs in the event of insolvency of the borrower. The average term of these liquidity facilities is approximately 1 to 5 years.

We lend eligible customers' securities to third-party borrowers who have been evaluated for credit risk using the same credit risk process that is applied to loans and other credit assets. In connection with these activities, we may provide indemnification to clients against losses resulting from the failure of the borrower to return loaned securities when due. All borrowings are fully collateralized with cash or marketable securities. As securities are loaned, we require borrowers to maintain collateral that is equal to or in excess of 100% of the fair value of the securities borrowed. The collateral is revalued on a daily basis. In fiscal 2022, we divested the securities lending agency business.

Documentary and commercial letters of credit represent our agreement to honour drafts presented by a third party upon completion of specific activities.

Commitments to extend credit represent our commitment to customers to grant them credit in the form of loans or other financings for specific amounts and maturities, subject to their meeting certain conditions.

Other commitments include commitments to fund external private equity funds and investments in equity and debt securities at market value at the time the commitments are drawn. In addition, we act as underwriter for certain new issuances under which we, alone or together with a syndicate of financial institutions, purchase the new issue for resale to investors.

## Indemnification Agreements

In the normal course of operations, we enter into various agreements that provide general indemnifications. These indemnifications typically occur in connection with sales of assets, securities offerings, service contracts, director contracts, membership agreements, clearing arrangements, derivative contracts and leasing transactions. Based on historical experience, we expect the risk of loss to be remote.

## Exchange and Clearinghouse Guarantees

We are a member of several securities and futures exchanges and central counterparties. Membership in certain of these organizations may require us to pay a pro rata share of the losses incurred by the organization in the event of default of another member. It is difficult to estimate our maximum exposure under these membership agreements, since this would require an assessment of future claims that may be made against us that have not yet occurred. Based on historical experience, we expect the risk of material loss to be remote.

## Pledged Assets and Collateral

In the ordinary course of business, we enter into trading, lending and borrowing activities that require us to pledge assets or provide collateral. Pledging and collateral transactions are typically conducted under terms and conditions that are usual and customary to these activities. If there is no default, the securities or their equivalents must be returned by the pledgee upon satisfaction of the obligation.

The following tables summarize our pledged assets and collateral, and the activities to which they relate:

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| **Bank Assets** | | |
| Cash and due from banks | **87** | 110 |
| Securities (1) | **95,194** | 82,975 |
| Loans | **71,795** | 54,656 |
| Other assets | **13,991** | 6,436 |
| | **181,067** | 144,177 |
| **Third-party Assets** (2) | | |
| Collateral received and available for sale or repledging | **177,300** | 180,705 |
| Less: Collateral not sold or re-pledged | **(42,237)** | (46,278) |
| | **135,063** | 134,427 |
| | **316,130** | 278,604 |

| (Canadian $ in millions) | 2022 | 2021 |
|---|---|---|
| **Uses of pledged assets and collateral** | | |
| Clearing systems, payment systems and depositories | **19,082** | 9,464 |
| Foreign governments and central banks | **87** | 110 |
| Obligations related to securities sold short | **40,979** | 32,073 |
| Obligations related to securities sold under repurchase agreements | **90,490** | 87,894 |
| Securities borrowing and lending (3) | **69,525** | 77,456 |
| Derivatives transactions | **16,341** | 11,439 |
| Securitization | **27,499** | 26,075 |
| Covered bonds | **33,175** | 26,340 |
| Other | **18,952** | 7,753 |
| Total pledged assets and collateral | **316,130** | 278,604 |

(1) Includes NHA mortgage-backed securities of $5,277 million, which are included in loans in our Consolidated Balance Sheet ($4,519 million as at October 31, 2021).
(2) Includes on-balance sheet securities borrowed or purchased under resale agreements and off-balance sheet collateral received.
(3) Includes off-balance sheet securities borrowing and lending.

## Lease Commitments

We have entered into a number of non-cancellable leases for premises and equipment. Our computer and software leases are typically fixed for one term. Leases that we have signed but have not yet taken possession of, were $303 million as at October 31, 2022 ($248 million as at October 31, 2021).

## Provisions and Contingent Liabilities

Provisions are recognized when we have a legal or constructive obligation as a result of past events, such as contractual commitments, legal or other obligations for which we can reliably estimate the obligation, and it is probable we will be required to settle the obligation. We recognize as a provision our best estimate of the amount required to settle the obligations as of the balance sheet date, taking into account the risks and uncertainties surrounding the obligations. Provisions are recorded in other liabilities on the Consolidated Balance Sheet. Contingent liabilities are potential obligations arising from past events, the existence of which will only be confirmed by the occurrence or non-occurrence of one or more future events not wholly within our control, and are not included in the table below.

*Legal Proceedings*

The bank and its subsidiaries are party to legal proceedings, including regulatory investigations, in the ordinary course of business. We review the status of these proceedings regularly and establish provisions when in our judgment it becomes probable that we will incur a loss and the amount can be reliably estimated. The bank's provisions represent our best estimates based upon currently available information for proceedings for which estimates can be made. However, the bank's provisions may differ significantly from actual losses as a result of, for example, the inherent uncertainty of the various potential outcomes of such proceedings; the varying stages of the proceedings; the existence of multiple defendants whose share of liability may not yet be determined; unresolved issues in such proceedings, some of which involve novel legal theories and interpretations; the fact that the underlying matters will change from time to time; and such proceedings may involve very large or indeterminate damages. While it is inherently difficult to predict the ultimate outcome of these proceedings, based on our current knowledge, we do not expect the outcome of any of these proceedings, individually or in the aggregate, to have a material adverse effect on the consolidated financial position or the results of operations of the bank. However, because of the factors listed above, as well as other uncertainties inherent in litigation and regulatory matters, there is a possibility that the ultimate resolution of legal proceedings or regulatory investigations may be material to the bank's consolidated financial position or its results of operations for any particular reporting period.

BMO Harris Bank N.A. (BMO Harris), as successor to M&I Marshall and Ilsley Bank (M&I), was named as the defendant in a lawsuit filed in the U.S. Bankruptcy Court for the District of Minnesota (Bankruptcy Court) in connection with a Ponzi scheme carried out by Thomas J. Petters and certain affiliated individuals and entities (collectively, Petters). The lawsuit, brought by a Trustee in bankruptcy proceedings for certain Petters entities, alleged that between 1999 and 2008, M&I (and a predecessor bank) helped facilitate the Ponzi scheme operated by Petters. The trial took place from October 12 to November 8, 2022 and on November 8, 2022, the jury awarded damages of approximately US$564 million against BMO Harris. This amount does not include prejudgment interest which could be as much as US$484 million. BMO Harris strongly denies the plaintiff's allegations and will continue to defend itself vigorously, including by bringing an appeal to the United States Court of Appeals for the Eighth Circuit, to contest the jury verdict and award. Following the jury's verdict, we recorded a provision of $1,120 million ($830 million after-tax), comprising $605 million in non-interest expense, other and $515 million in interest expense, other liabilities, representing damages awarded by the jury and an estimate of maximum possible pre-judgment interest, net of estimated recoveries. Recoveries relate to a settlement arrangement made in 2015 in connection with another Petters matter.

*Restructuring Charges*

Provisions for restructuring charges as at October 31, 2022 are $94 million ($136 million as at October 31, 2021), primarily severance-related costs. This represents our best estimate of the amount that will ultimately be paid out.

Changes in the provision balance during the year were as follows:

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| Balance at beginning of year | **248** | 472 |
| Additional provisions/increase in provisions | **1,201** | 166 |
| Provisions utilized | **(155)** | (340) |
| Amounts reversed | **(20)** | (44) |
| Foreign exchange and other | **3** | (6) |
| Balance at end of year (1) | **1,277** | 248 |

(1) Balance includes severance obligations, restructuring charges and legal provisions.

# Note 25: Operating and Geographic Segmentation

## Operating Groups

We conduct our business through three operating groups, each of which has a distinct mandate. We determine our operating groups based on our management structure and therefore these groups, and the results attributed to them, may not be comparable with those of other financial services companies. We evaluate the performance of our operating groups using reported and adjusted measures, such as net income, revenue growth, return on equity, and non-interest expense-to-revenue (efficiency) ratio, as well as operating leverage.

## Personal and Commercial Banking

Personal and Commercial Banking (P&C) is comprised of two operating segments: Canadian Personal and Commercial Banking and U.S. Personal and Commercial Banking.

*Canadian Personal and Commercial Banking*

Canadian Personal and Commercial Banking (Canadian P&C) provides a full range of financial products and services to eight million customers. Personal Banking provides financial solutions through a network of almost 900 branches, contact centres, digital banking platforms and over 3,200 automated teller machines. Commercial Banking serves clients across Canada and delivers sector and industry expertise, as well as a local presence.

*U.S. Personal and Commercial Banking*

U.S. Personal and Commercial Banking (U.S. P&C) offers a broad range of products and services. Our retail and small and mid-sized business banking customers are served through our branches, contact centres, online and mobile banking platforms, and automated banking machines across eight states. Commercial Banking serves clients across the United States and delivers sector and industry expertise and local presence.

## BMO Wealth Management

BMO's group of wealth management businesses (BMO WM) serves a full range of client segments, from mainstream to ultra high net worth and institutional, with a broad offering of wealth management products and services, including insurance products.

## BMO Capital Markets

BMO Capital Markets (BMO CM) is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. Through our Investment and Corporate Banking and Global Markets lines of business, we operate in 32 locations around the world, including 18 offices in North America.

## Corporate Services

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology including data and analytics, and also provides cybersecurity and operations services.

The costs of these Corporate Units and T&O services are largely transferred to the three operating groups (P&C, BMO WM and BMO CM), with any remaining amounts retained in Corporate Services results. As such, Corporate Services results largely reflect the impact of residual treasury-related activities, the elimination of taxable equivalent adjustments and residual unallocated expenses.

## Basis of Presentation

The results of these operating groups are based on our internal financial reporting systems. The accounting policies used in these segments are generally consistent with those followed in the preparation of our consolidated financial statements, as disclosed in Note 1 and throughout the consolidated financial statements. Income taxes presented below may not be reflective of taxes paid in each jurisdiction in which we operate. Income taxes are generally applied to each segment based on a statutory tax rate and may be adjusted for items and activities specific to each segment. A notable accounting measurement difference is the taxable equivalent basis adjustment, as described below.

Periodically, certain business lines and units within the business lines are transferred between client and corporate support groups to more closely align our organizational structure with our strategic priorities. In addition, revenue and expense allocations are updated to more accurately align with current experience. Results for prior periods are restated to conform with the current year's presentation.

*Taxable Equivalent Basis*

We analyze revenue on a taxable equivalent basis (teb) at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent before-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. The offset to the operating segments' teb adjustments is reflected in Corporate Services revenue and provision for income taxes. The teb adjustment for the year ended October 31, 2022 was $270 million ($315 million in 2021).

*Inter-Group Allocations*

Various estimates and allocation methodologies are used in the preparation of the operating groups' financial information. Overhead expenses are allocated to operating groups using allocation formulas applied on a consistent basis. Operating group net interest income reflects internal funding charges and credits on the groups' assets, liabilities and capital at market rates, taking into account relevant terms and currency considerations. The offset of the net impact of these charges and credits is reflected in Corporate Services. These inter-group allocations are also applied to the geographic segmentation.

Our results and average assets, grouped by operating segment, are as follows:

| (Canadian $ in millions) | **Canadian P&C** | **U.S. P&C** | **BMO WM** | **BMO CM** | **Corporate Services** (1) | **2022 Total** |
|---|---|---|---|---|---|---|
| Net interest income (2) | **7,449** | **5,037** | **1,188** | **3,197** | **(986)** | **15,885** |
| Non-interest revenue | **2,419** | **1,265** | **3,336** | **2,975** | **7,830** | **17,825** |
| Total Revenue | **9,868** | **6,302** | **4,524** | **6,172** | **6,844** | **33,710** |
| Provision for (recovery of) credit losses on impaired loans | **432** | **107** | **2** | **(32)** | **(7)** | **502** |
| Provision for (recovery of) credit losses on performing loans | **(91)** | **(90)** | **(4)** | **(11)** | **7** | **(189)** |
| Total provision for (recovery of) credit losses | **341** | **17** | **(2)** | **(43)** | **–** | **313** |
| Insurance claims, commissions and changes in policy benefit liabilities | **–** | **–** | **(683)** | **–** | **–** | **(683)** |
| Depreciation and amortization | **516** | **424** | **258** | **282** | **–** | **1,480** |
| Non-interest expense | **3,833** | **2,619** | **3,306** | **3,573** | **1,383** | **14,714** |
| Income before taxes | **5,178** | **3,242** | **1,645** | **2,360** | **5,461** | **17,886** |
| Provision for income taxes | **1,352** | **745** | **394** | **588** | **1,270** | **4,349** |
| Reported net income | **3,826** | **2,497** | **1,251** | **1,772** | **4,191** | **13,537** |
| Average assets (3) | **292,087** | **145,187** | **50,488** | **404,728** | **180,007** | **1,072,497** |

| | Canadian P&C | U.S. P&C | BMO WM | BMO CM | Corporate Services (1) | 2021 Total |
|---|---|---|---|---|---|---|
| Net interest income (2) | 6,561 | 4,268 | 982 | 3,115 | (616) | 14,310 |
| Non-interest revenue | 2,225 | 1,243 | 6,071 | 3,011 | 326 | 12,876 |
| Total Revenue | 8,786 | 5,511 | 7,053 | 6,126 | (290) | 27,186 |
| Provision for (recovery of) credit losses on impaired loans | 493 | 22 | 4 | 11 | (5) | 525 |
| (Recovery of) credit losses on performing loans | (116) | (166) | (16) | (205) | (2) | (505) |
| Total provision for (recovery of) credit losses | 377 | (144) | (12) | (194) | (7) | 20 |
| Insurance claims, commissions and changes in policy benefit liabilities | – | – | 1,399 | – | – | 1,399 |
| Depreciation and amortization | 486 | 475 | 323 | 281 | – | 1,565 |
| Non-interest expense | 3,482 | 2,338 | 3,520 | 3,181 | 1,423 | 13,944 |
| Income (loss) before taxes | 4,441 | 2,842 | 1,823 | 2,858 | (1,706) | 10,258 |
| Provision for (recovery of) income taxes | 1,153 | 666 | 441 | 738 | (494) | 2,504 |
| Reported net income (loss) | 3,288 | 2,176 | 1,382 | 2,120 | (1,212) | 7,754 |
| Average assets (3) | 263,004 | 129,009 | 48,232 | 372,475 | 168,420 | 981,140 |

(1) Corporate Services includes Technology and Operations.

(2) Operating groups report on a taxable equivalent basis – see Basis of Presentation section.

(3) Included within average assets are average earning assets, which are comprised of deposits with other banks, deposits at central banks, reverse repos, loans and securities. Total average earning assets for 2022 are $979,341 million, including $278,022 million for Canadian P&C, $138,094 million for U.S. P&C, and $563,225 million for all other operating segments including Corporate Services (2021 – Total: $897,302 million, Canadian P&C: $248,215 million, U.S. P&C: $122,166 million and all other operating segments: $526,921 million).

Effective the first quarter of fiscal 2022, certain expense allocations were updated within our operating segments to better align with current experience, with no impact to total bank results. Certain comparative figures have been reclassified to conform with the current year's presentation.

*Geographic Information*

We operate primarily in Canada and the United States, but we also have operations in the United Kingdom, Europe, the Caribbean and Asia, which are grouped in other countries in the table below. We allocate our results by geographic region based on the location of the unit responsible for managing the related assets, liabilities, revenues and expenses.

Our results and average assets, grouped by geographic region, are as follows:

| (Canadian $ in millions) | | | | **2022** |
|---|---|---|---|---|
| | **Canada** | **United States** | **Other countries** | **Total** |
| Total Revenue | **15,977** | **16,980** | **753** | **33,710** |
| Income before taxes | **7,335** | **10,526** | **25** | **17,886** |
| Reported net income | **5,557** | **7,894** | **86** | **13,537** |
| Average Assets | **600,607** | **416,885** | **55,005** | **1,072,497** |
| | | | | 2021 |
| Total Revenue | 15,983 | 9,242 | 1,961 | 27,186 |
| Income (loss) before taxes | 6,242 | 4,224 | (208) | 10,258 |
| Reported net income (loss) | 4,809 | 3,254 | (309) | 7,754 |
| Average Assets | 544,652 | 376,102 | 60,386 | 981,140 |

# Note 26: Significant Subsidiaries

As at October 31, 2022, the bank, either directly or indirectly through its subsidiaries, controls the following significant operating subsidiaries.

| Significant Subsidiaries (1)(2) | Head or principal office | Book value of shares owned by the bank (Canadian $ in millions) |
|---|---|---|
| Bank of Montreal (China) Co. Ltd. | Beijing, China | 463 |
| Bank of Montreal Europe plc | Dublin, Ireland | 1,130 |
| Bank of Montreal Holding Inc. and subsidiaries, including: | Toronto, Canada | 36,913 |
| Bank of Montreal Mortgage Corporation | Calgary, Canada | |
| BMO Mortgage Corp. | Vancouver, Canada | |
| BMO Investments Limited | Hamilton, Bermuda | |
| BMO Reinsurance Limited | St. Michael, Barbados | |
| BMO Nesbitt Burns Inc. | Toronto, Canada | |
| BMO Investments Inc. | Toronto, Canada | |
| BMO InvestorLine Inc. | Toronto, Canada | |
| BMO Capital Markets Limited | London, England | 289 |
| BMO Financial Corp. and subsidiaries, including: | Chicago, United States | 32,490 |
| BMO Asset Management Corp. and subsidiaries | Chicago, United States | |
| BMO Capital Markets Corp. | New York, United States | |
| BMO Harris Bank National Association and subsidiaries, including: | Chicago, United States | |
| BMO Harris Investment Company LLC | Chicago, United States | |
| BMO Life Insurance Company and subsidiaries, including: | Toronto, Canada | 1,610 |
| BMO Life Holdings (Canada), ULC | Halifax, Canada | |
| BMO Life Assurance Company | Toronto, Canada | |
| BMO Trust Company | Toronto, Canada | 597 |
| BMO Japan Securities Ltd. | Tokyo, Japan | 6 |

(1) Each subsidiary is incorporated or organized under the laws of the state or country in which the principal office is situated, except for BMO Financial Corp., BMO Asset Management Corp. and BMO Capital Markets Corp., which are incorporated under the laws of the state of Delaware, United States. BMO Harris Investment Company LLC is organized under the laws of the state of Nevada, United States.

(2) Unless otherwise noted, the bank, either directly or indirectly through its subsidiaries, owns 100% of the outstanding voting shares of each subsidiary.

## Significant Restrictions

Our ability to transfer funds between our subsidiaries may be restricted by statutory, contractual, capital and regulatory requirements. Restrictions include:

- Assets pledged as security for various liabilities we incur. Refer to Note 24 for details
- Assets of our consolidated structured entities that are held for the benefit of the note holders. Refer to Note 7 for details.
- Assets held by our insurance subsidiaries. Refer to Note 12 for details.
- Regulatory and statutory requirements that reflect capital and liquidity requirements.
- Funds required to be held with central banks. Refer to Note 2 for details.

# Note 27: Related Party Transactions

Related parties include subsidiaries, joint ventures, associates, employee future benefit plans and key management personnel and their close family members. Close family members include spouses, common-law partners and dependent minors. Transactions with our subsidiaries are eliminated on consolidation, and are not disclosed as related party transactions.

## Key Management Personnel and Their Close Family Members

Key management personnel is defined as those persons having authority and responsibility for planning, directing and/or controlling the activities of an entity, being the members of our Board of Directors (directors) and certain senior executives.

The following table presents the compensation of our key management personnel:

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| Base salary and incentives | **25** | 22 |
| Post-employment benefits | **3** | 3 |
| Share-based payments (1) | **45** | 32 |
| Total key management personnel compensation | **73** | 57 |

(1) Amounts included in share-based payments are the fair values of awards granted in the year.

We offer senior executives market interest rates on credit card balances, a fee-based subsidy on annual credit card fees, and a select suite of customer loan and mortgage products at rates normally accorded to preferred customers. At October 31, 2022, loans to key management personnel and their close family members totalled $20 million ($22 million as at October 31, 2021). We had no provision for credit losses related to these amounts as at October 31, 2022 and 2021.

Directors receive a specified amount of their annual retainer in deferred stock units. Until a director's shareholdings (including deferred stock units) are eleven times greater than their annual retainer, they are required to take 100% of their annual retainer and other fees in the form of either our common shares or deferred stock units. Once the shareholding requirements have been met, directors may elect to receive the remainder of such retainer fees and other remuneration in cash, common shares or deferred stock units.

Directors of our wholly owned subsidiary, BMO Financial Corp., are required to take a specified minimum amount of their annual retainer and other fees in the form of deferred stock units.

## Joint Ventures and Associates

We provide banking services to our joint ventures and associates on the same terms offered to our customers for these services.

The following table presents the carrying amount of our interests in joint ventures and associates accounted for under the equity method, as well as our share of the income of those entities:

| (Canadian $ in millions) | | Joint ventures | | Associates |
|---|---|---|---|---|
| | **2022** | 2021 | **2022** | 2021 |
| Carrying amount | **585** | 474 | **708** | 661 |
| Share of net income | **126** | 107 | **148** | 141 |

We do not have any joint ventures or associates that are individually material to our consolidated financial statements.

The following table presents transactions with our joint ventures and associates:

| (Canadian $ in millions) | **2022** | 2021 |
|---|---|---|
| Loans (1) | **1,190** | 791 |
| Deposits | **202** | 117 |
| Fees paid for services received | **61** | 59 |
| Guarantees and commitments | **93** | 73 |

(1) Includes customers' liability under acceptances.

# Where to Find More Information

## Corporate Governance

Our website provides information on our corporate governance practices, including our code of conduct, our director independence standards and our board mandate and committee charters.

**www.bmo.com/corporategovernance**

## Management Proxy Circular

Our management proxy circular contains information on our directors, board committee reports and a detailed discussion of our corporate governance practices. It will be published in March 2023 and will be available on our website.

**www.bmo.com/corporategovernance**

## Stock Exchange Governance Requirements

A summary of the significant ways in which our corporate governance practices differ from the corporate governance practices required for U.S. domestic companies under New York Stock Exchange Listing Standards is posted on our website.

**www.bmo.com/corporategovernance**

## Sustainability Performance

BMO's *Sustainability Report and Public Accountability Statement (PAS)* outlines the way we govern, manage, measure and disclose the environmental, social and governance risks and opportunities related to our business, while creating value for our many stakeholders. We use the Global Reporting Initiative (GRI) Standards as a framework for reporting on our sustainability performance, along with other internationally recognized standards, including those issued by the Sustainability Accounting Standards Board (SASB). The *2022 Sustainability Report/PAS* will be available on our website in March 2023.

**www.bmo.com/corporateresponsibility**

## Have Your Say

If you have a question you would like to ask at our annual meeting of shareholders, you can submit your question during the webcast. You can also submit a question to the board by writing to the Corporate Secretary at Corporate Secretary's Office, 21st Floor, 1 First Canadian Place, Toronto, ON M5X 1A1, or by emailing corp.secretary@bmo.com.

### Shareholders

Contact our Transfer Agent and Registrar for:

- Dividend information
- Change in share registration or address
- Lost certificates
- Estate transfers
- Duplicate mailings
- Direct registration

**Computershare Trust Company of Canada**
100 University Avenue, 8th Floor, Toronto, ON M5J 2Y1
Email: **service@computershare.com**
**www.computershare.com/ca/en**

Canada and the United States
Call: **1-800-340-5021** Fax: **1-888-453-0330**

International
Call: **514-982-7800** Fax: **416-263-9394**

**Computershare Trust Company, N.A.**
Co-Transfer Agent (U.S.)

**Computershare Investor Services PLC** is the Transfer Agent and Registrar for common shares in Bristol, United Kingdom

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Online filing information:

BMO filings in Canada
Canadian Securities Administrators
**www.sedar.com**

BMO filings in the United States
Securities and Exchange Commission
**www.sec.gov/edgar.shtml**

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For all other shareholder inquiries:

**Shareholder Services**
BMO Financial Group
Corporate Secretary's Office
21st Floor, 1 First Canadian Place
Toronto, ON M5X 1A1
Email: **corp.secretary@bmo.com**
Call: **416-867-6785**

### Institutional Investors and Research Analysts

To obtain additional financial information:

**Investor Relations Department**
BMO Financial Group
10th Floor, 1 First Canadian Place
Toronto, ON M5X 1A1
Email: **investor.relations@bmo.com**

### Employees

For information on BMO's Employee Share Ownership Plan:

Call: **1-877-266-6789**

### Printed Copies

To obtain printed copies of the annual report:

**Communications and Social Impact Department**
Email: **annualreports@bmo.com**
Call: **416-867-7640**

*On peut obtenir sur demande un exemplaire en français.*
**www.bmo.com**

### Customers

For assistance with your investment portfolio or other financial needs:

**BMO Bank of Montreal**
English and French: **1-877-225-5266**
Cantonese and Mandarin: **1-800-665-8800**
Outside Canada and the continental United States: **514-881-3845**
TTY service for hearing impaired customers: **1-866-889-0889**
**www.bmo.com**

**BMO InvestorLine: 1-888-776-6886**
**www.bmoinvestorline.com**

**BMO Harris Bank**
United States: **1-888-340-2265**
Outside the United States: **1-847-238-2265**
**www.bmoharris.com**

**BMO Nesbitt Burns: 416-359-4000**
**www.bmonesbittburns.com**

# Shareholder Information

## Market for Shares of Bank of Montreal

The common shares of Bank of Montreal are listed on the Toronto Stock Exchange (TSX) and New York Stock Exchange (NYSE). The preferred shares of Bank of Montreal are listed on the TSX.

## Common Share Trading in Fiscal 2022

| Primary stock exchanges | Ticker | **Closing price October 31, 2022** | High | Low | Total volume of shares traded |
|---|---|---|---|---|---|
| TSX | BMO | **$125.49** | $154.47 | $113.73 | 567.1 million |
| NYSE | BMO | **US$92.08** | US$122.77 | US$81.57 | 61.0 million |

## Common Share History

| Date | Action | Common share effect |
|---|---|---|
| March 14, 2001 | 100% stock dividend | Equivalent to a 2-for-1 stock split |
| March 20, 1993 | 100% stock dividend | Equivalent to a 2-for-1 stock split |
| June 23, 1967 | Stock split | 5-for-1 stock split |

## Important Dates

**Fiscal Year End** **October 31**
**Annual Meeting** **April 18, 2023 | 9:30 a.m. ET**

Further details will be made available on our website.

**www.bmo.com/investorrelations**

### 2023 Dividend Payment Dates*

| Common and preferred shares record dates | Common shares payment dates | Preferred shares payment dates** |
|---|---|---|
| **January 30** | **February 28** | **February 27** |
| **April 28** | **May 26** | **May 25** |
| **July 28** | **August 28** | **August 25** |
| **October 30** | **November 28** | **November 27** |

*Subject to approval by the Board of Directors.
**The preferred shares series 50 payment dates are semi-annual on May 26 and November 27, 2023.

The *Bank Act* prohibits a bank from declaring or paying a dividend if it is or would thereby be in contravention of regulations or an order from the Office of the Superintendent of Financial Institutions dealing with adequacy of capital or liquidity. Currently, this limitation does not restrict the payment of dividends on Bank of Montreal's common or preferred shares.

## Managing Your Shares

**Our Transfer Agent and Registrar**
Computershare Trust Company of Canada serves as Transfer Agent and Registrar for common and preferred shares, with transfer facilities in Montreal, Toronto, Calgary and Vancouver. Computershare Investor Services PLC and Computershare Trust Company, N.A. serve as Transfer Agents and Registrars for common shares in Bristol, United Kingdom and Canton, Massachusetts, respectively. See previous page for contact information.

**Reinvesting Your Dividends and Purchasing Additional Common Shares**
Through the Shareholder Dividend Reinvestment and Share Purchase Plan, you can reinvest cash dividends from your BMO common shares to purchase additional BMO common shares without paying a commission or service charge. You can also purchase additional common shares in amounts up to $40,000 per fiscal year. Contact Computershare Trust Company of Canada or Shareholder Services for details.

# Your vote matters.

## Watch for your proxy circular in March and remember to vote.

## Employee Ownership*

**80.3%** of our Canadian employees participate in the BMO Employee Share Ownership Plan – a clear indication of their commitment to BMO.

*As at October 31, 2022.

**Credit Ratings**
Credit rating information appears on page 99 of this annual report and on our website.

**www.bmo.com/creditratings**

**Direct Deposit**
You can choose to have your dividends deposited directly to an account in any financial institution in Canada or the United States that provides electronic funds transfer services.

**Personal Information Security**
We advise our shareholders to be diligent in protecting their personal information. Details are available on our website.

**www.bmo.com/security**

## Auditors KPMG LLP

Strategic design: Ove Brand | Design *www.ovedesign.com*

BMO