Manitoba Hydro’s 2021/22 Interim Rate Application – Minimum Filing Requirements (“MFR”) Listing	
MFRs	**Information Requested**
PUB MFR 1	Details of all material changes in the Corporation’s operations since the last GRA hearing.
PUB MFR 2	Current Corporate Risk Analysis Report.
PUB MFR 3	Actual, budgeted, outlook, or forecast operating statements, balance sheets, and cash flow statements (both direct and indirect methods) for 2020/21, 2021/22, 2022/23, and all additional forward years for which these documents exist. [2019 GRA Appendix 1, 2]
PUB MFR 4	Quarterly Financial Statements for the current fiscal year.
PUB MFR 5	MHEB 70th Annual Report for year ended March 31, 2021.
PUB MFR 6	Details of the determination of each of the financial ratios (debt-to-equity, interest coverage, and capital coverage) for each of the years 2019/20 to 2022/23 and any future years as available. [2019/20 GRA PUB/MH 1-8]
PUB MFR 7	Detail of the Net Movement in Regulatory Deferral Accounts including Opening and Closing Balances, Additions, and Amortizations. [2019 GRA - PUB/MH 10 a-c]
PUB MFR 8	A table that shows the incremental and cumulative impacts to retained earnings of a 5- and 7-year drought, beginning in 2021/22. [2017/18 GRA PUB/MH II-40]
PUB MFR 9	Revenue requirements including cost components (Finance/Depreciation/Operating/Water Rentals/F&PP/Taxes) for the years 2019/20, to 2023/24 for each of the following: • Keeyask generating station • Manitoba-Minnesota Transmission Project • Great Northern Transmission Line • Bipole III and Riel station • Birtle Transmission Project • Business Operations Capital [2019/20 GRA PUB/MH I-9]
PUB MFR 10	Continuity schedules showing the deferrals and amortization (or proposed amortization) of the Bipole III Deferral Account and the Major Capital Deferral Account. [2019/20 GRA PUB/MH I-11]
PUB MFR 11	Incremental revenues and unit revenues from Keeyask by year, broken down by firm and opportunity sales. [2017/18 GRA PUB MFR 82]
PUB MFR 12	Details of the impacts of COVID-19 pandemic on O&A expenditures in 2020/21 and 2021/22 to date.
PUB MFR 13	Current Economic and Financial Indicators (including interest rates) Forecast. [2019/20 GRA Additional Information Attachment 5]
PUB MFR 14	Most recent credit rating reports from DBRS, Moody’s, and S&P.

PUB MFR 15	Manitoba Hydro’s most recent presentation(s) made to each credit rating agency.
PUB MFR 16	Current approved Electric Load Forecast and tables that show updates to both the load forecast and the actual loads resulting from the COVID-19 pandemic.
PUB MFR 17	Updates to graphs of Annual System Inflows, Energy in Storage, Daily Hydraulic Energy from Inflow, and Total Hydraulic Generation.
PUB MFR 18	Graphs and tables of net export revenues and net income for 2021/22 and 2022/23 for each of the possible water flow conditions (P1 to P100). [2019/20 GRA PUB/MH I-29(c)]
PUB MFR 19	Capital Expenditure Forecast. If there have been updates since the approved CEF provide a table that shows the updates.
PUB MFR 20	PCOSS21 and allocation tables; and PCOSS22 (if available).
PUB MFR 21	Proofs of Revenue for 2021/22 and 2022/23.
COALITION MFR 22	Please provide a detailed explanation of how Manitoba Hydro plans to revise its strategic actions for 2021/22 and 2022/23 to reduce the deleterious impacts of drought including: a) Potential deferrals or reprioritizations of capital expenditures in the event of financial distress due to drought; b) Potential O&A Expenses and other cost reductions that could be implemented in the event of financial distress; and Potential adjustments to corporate strategies such as alternate debt management strategies and strategies to maximize domestic and net export revenues before asking for rate increases.
COALITION MFR 23	An explanation of the financial metrics Manitoba Hydro used to determine the level of proposed interim rate increase and how the assessment of these financial metric resulted in the rate relief sought in the interim rate application
COALITION MFR 24	A detailed description of how Manitoba Hydro attempted to balance the financial integrity of the corporation with the impacts on customers, in making its interim rate request
COALITION MFR 25	Further to PUB MFR #3, a breakdown of domestic revenues between revenues at existing rates and additional revenues from approved and projected rate increases
COALITION MFR 26	Manitoba Hydro’s Annual Business Plan for 2021/22
COALITION MFR 27	Details of the contracted wage settlements in place for 2020/21, 2021/22 and 2022/23 [reference: Coalition/MH I-14 (j) from the 2019/20 Rate Application].
MIPUG MFR 28	Major Capital Projects Quarterly Reports to the PUB since the 2019/20 Rate Application.
MIPUG MFR 29	Operating & Administrative Quarterly Reports to the PUB since the 2019/20 Rate Application.

PUB MFR 1

Corporate

Details of all material changes in the Corporation's operations since the last GRA hearing.

Material changes in the Corporation's operations that have taken place since the 2019/20 Rate Application process include:

Strategy 2040

- Decarbonization, digitalization and decentralization are key trends that are increasingly reshaping the energy sector. Across Canada and elsewhere, government policy interventions, technological advancements, economics, customer preferences, and climate change are driving the pace of these trends that will shape and/or disrupt Manitoba Hydro's business environment in the future. To guide success through these anticipated changes over the next 20 years, Manitoba Hydro has formalized work on a long-term strategic vision, known as Strategy 2040. This has included a new organizational mission statement: *Help all Manitobans efficiently navigate the evolving energy landscape, leveraging their clean energy advantage, while ensuring safe, clean, reliable energy at the lowest possible cost.*

- Manitoba Hydro has completed significant development work on Strategy 2040, and implemented supporting operational changes as identified through our business model review, as well as other work to ensure Manitoba Hydro is ready to continue to support customers as the energy landscape evolves. The new business model will elevate the critical capabilities required to ensure we keep costs as low as possible while maintaining service levels expected by our customers, including capability building in the following areas: Customer Solutions & Experience, Asset Management, Work Management, Project Delivery, Transformation, Digital, Enterprise Risk Management and Strategy & Enterprise Planning.

- In addition to the new business model, planning and initial work has commenced on a range of initiatives that will result in the foundational work necessary to advance Manitoba Hydro toward achieving the strategic objectives identified under Strategy 2040. Examples of this ongoing work includes development of an Integrated Resource Plan, initiatives to better understand the evolving energy needs and preferences of customers, and development of a new enterprise planning cycle to better support business planning and development of key inputs for financial forecasting activities.

Other Operational Changes

- Manitoba Hydro implemented a virtual operating model in March 2020 in response to COVID-19. While over one-third of the workforce continued to report to a Manitoba Hydro office or facility, or work directly with the public, many employees moved to a remote model working some or all of their hours from home. IT equipment and infrastructure were deployed to ensure a remote working environment that allowed employees to work effectively. Significant efforts were also made to support those employees that continued to report to a Manitoba Hydro office or facility. As part of these efforts, the over 1000 safe work procedures Hydro has in place were reviewed or adjusted to ensure the hazard of COVID-19 was considered in every task performed, while ensuring the safety of our employees, and the protection of our customers and the public.

- Keeyask construction and commissioning has also been impacted by COVID-19 and health and safety measures have been put in place to protect site employees, contractors and the surrounding communities. Due to public health orders, the provincial vaccination plan and other factors, impacts of COVID-19 are expected to carry through the 2021/22 fiscal year.

- Despite challenges related to COVID -19, strong progress has been made on Keeyask. To date, five of the seven units of the Keeyask Generating Station have been placed into service (unit 1 in February 2021, unit 2 in April 2021, unit 3 in June 2021, and unit 5 in September 2021, and unit 4 in October 2021). Additionally, all major concrete work was completed in March 2021. The project is on track to have all generating units in-service by March 2022 and be within the approved control budget of $8 726 million.

- Construction of the Manitoba Minnesota Transmission Project (“MMTP”) was completed in May 2020 and the transmission line was placed in-service on June 1, 2020. Commissioning of some components was postponed due to COVID-19, but all aspects of the project were in-service by November 1, 2020. Actual costs for MMTP are tracking to be within the approved control budget of $490 million.

- The Birtle Transmission Project received an Environment Act License in January 2020; construction started in July 2020 and the transmission line came into service ahead of schedule on March 29, 2021. In March 2020, the Federal Government approved funding through the Investing in Canada Infrastructure Program, which Manitoba Hydro expects will provide approximately $12.3 million toward the project. The project is on track to be within the approved control budget of $69 million.

- In February of 2021, Manitoba Hydro commenced a reorganization of Manitoba Hydro International (“MHI”) following a comprehensive review of the subsidiary’s operations. As a part of the reorganization, the international consulting business of MHI, operating under Manitoba Hydro International Utility Services, will be gradually wound down as current contracts expire.

- Manitoba Hydro supported the transition of energy efficiency services to Efficiency Manitoba in July 2020.

The response to MIPUG MFR 28 provides the Quarterly Major Capital Projects reports filed with the PUB since Q3 of 2018/19 and provides additional details related to projects.

The MHEB Annual and Quarterly reports also highlight significant accomplishments and events that are important to the operations of the Corporation. Copies of the reports can be found as responses to PUB MFR 5 and PUB MFR 4 respectively.

PUB MFR 2

Corporate

Current Corporate Risk Analysis Report.

Manitoba Hydro no longer produces a Corporate Risk Analysis Report as previously presented. Risk identification and reporting is being revised as part of Manitoba Hydro's establishment of a new Enterprise Risk Management (ERM) Program.

Manitoba Hydro is developing and maturing its ERM Program over time and anticipates an approximately 3-year progressive development of the ERM Program to achieve the desired level of maturity. The ERM Program is being developed and overseen by a new ERM Division at Manitoba Hydro. Currently, progress has been made in the development of an ERM Framework and the identification and assessment of the top risks facing the enterprise. Further refinement of the ERM Framework and the ERM processes for reporting top risks to the Manitoba Hydro Executive and Manitoba Hydro-Electric Board are ongoing. Upcoming phases of development include establishing enterprise risk appetite statements and the embedding of the ERM Framework into strategy & planning and other key business processes.

Enterprise Risk Management & ERM Framework

The mandate of the ERM is: *To provide an entity-wide view of risks faced by the organization and a proactive, comprehensive and standardized approach to the management of these risks and facilitate risk intelligent decision making across the enterprise.*

A key component of the ERM Program is the establishment of an ERM Framework for the enterprise. The following provides an overview of Manitoba Hydro's ERM Framework:

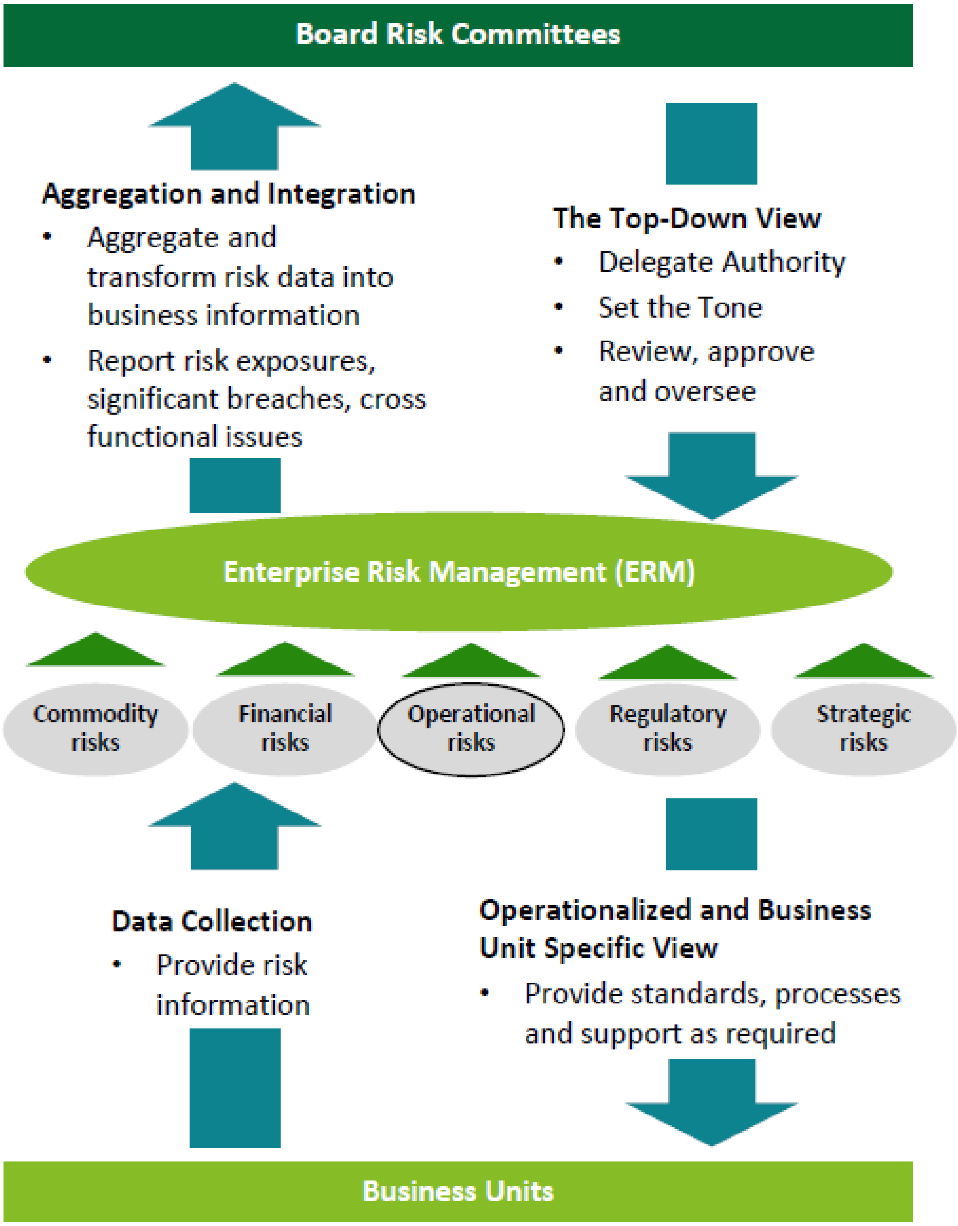
Framework Category	Focus
Governance & Risk Culture *The governance structure, ambition and vision for risk management in the enterprise. Responsibility of the Executive and the Manitoba Hydro-Electric Board*	**Risk Governance Bodies:** *Creating the structure and oversight for risk to be effectively managed.* **Risk Policies:** *Setting the tone and level of risk management applied across the organization.* **Risk Culture:** *The values and behaviours that drive risk management in the organization.* **Risk Appetite:** *Setting the level of risk the organization is willing to accept, within tolerances.*

Risk Organization & Process *Development & management of the risk infrastructure and processes for the Enterprise. This is the responsibility of ERM and overseen by Executive.*	**Risk Resource:** *The people and time that is applied to risks management, centrally and across business units.* **Risk Procedures & Templates:** *Providing guidance and clear direction for all areas of the organization to perform risk management.* **Risk Supporting Tools:** *Manual and automated tools leveraged to provide a better risk management process.* **Risk Training:** *The support provided across the business to embed risk management.*
Risk Management Cycle *Cycle of identification, assessment and management of risks. The process is facilitated by ERM, the risks are owned by the business unit*	**Risk Identification:** *Process of identifying risks and opportunities to business operations, financials and reputation.* **Risk Quantification & Response:** *Evaluation of risk on a common scale, with implementation of appropriate response.* **Risk Management:** *Ongoing management and evaluation of risk mitigations, controls and other responses to risk.* **Risk Monitoring & Reporting:** *Monitoring of key risks indicators to assess likelihood of crystallization and reporting of current risk environment.*

Risk Aggregation and Reporting

As noted, the ambition and vision for risk management in the enterprise flow from the Manitoba Hydro-Electric Board (“MHEB”) and Executive. This is incorporated into the ERM Program through standards and processes for identifying, assessing and mitigating risks.

Those operational, project and detailed risks that have been identified are managed at the Business Unit level. Aggregated risk information is then captured by ERM Program and reported up to Manitoba Hydro Executive and MHEB. The ERM Framework and process under the ERM Program facilitate this aggregation and reporting of risk information. This is show in the figure below:



The type and cadence of reporting on risks through the ERM Program will be as follows:

- **Quarterly Reports:**
  - Reporting to a committee of the Manitoba Hydro Executive and identified committees of the MHEB on a quarterly basis. Reports then advanced to Manitoba Hydro Executive and MHEB, respectively
  - Quarterly Reports focused on status of risk mitigations on top risks, any material changes to those risks and any new additions to the identified top risks

- **Annual Report:**
    - Submitted to a committee of the Manitoba Hydro Executive and identified committees of the MHEB. Reports then advanced to Manitoba Hydro Executive and MHEB
    - Report that outlines the updated assessment of the top risks facing the enterprise and how they are (and will be) mitigated

PUB MFR 3

Financial Results and Forecasts

Actual, budgeted, outlook, or forecast operating statements, balance sheets, and cash flow statements (both direct and indirect methods) for 2020/21, 2021/22, 2022/23, and all additional forward years for which these documents exist. [2019 GRA Appendix 1, Appendix 2].

Attached are the actual and projected operating statements, balance sheets, and cash flow statements (both direct and indirect methods) for 2020/21, 2021/22, and 2022/23.

ELECTRIC OPERATIONS
OPERATING STATEMENT
(In Millions of Dollars)

For the year ended March 31	ACTUAL 2020/21	BUDGET 2021/22	FORECAST 2021/22	PRELIMINARY PLAN 2022/23
REVENUES				
Domestic Revenue				
at approved rates	1 714	1 751	1 792	1 769
additional	-	35	27	88
Extraprovincial	611	806	637	916
Other	28	29	29	29
	2 353	2 620	2 485	2 802
EXPENSES				
Operating and Administrative	534	557	557	595
Net Finance Expense	782	1 019	994	1 039
Depreciation and Amortization	530	583	579	621
Water Rentals and Assessments	128	131	98	134
Fuel and Power Purchased	184	166	428	157
Capital and Other Taxes	149	154	152	161
Other Expenses	45	77	87	106
Corporate Allocation	8	8	8	8
	2 360	2 694	2 902	2 820
Net Income before Net Movement in Reg. Deferral	(7)	(74)	(417)	(19)
Net Movement in Regulatory Deferral	121	234	214	225
Net Income	114	160	(203)	206
Net Income Attributable to:				
Manitoba Hydro	**116**	**177**	**(190)**	**200**
Non-Controlling Interests	(2)	(16)	(13)	6
	114	160	(203)	206
Approved Percent Increase	2.90%			
Proposed Percent Increase		3.50%	5.00%	0.00%

ELECTRIC OPERATIONS
BALANCE SHEET
(In Millions of Dollars)

For the year ended March 31	ACTUAL 2020/21	BUDGET 2021/22	FORECAST 2021/22	PRELIMINARY PLAN 2022/23
ASSETS				
Plant in Service	24 286	29 253	28 184	29 122
Accumulated Depreciation	(2 466)	(3 069)	(2 974)	(3 543)
Net Plant in Service	21 820	26 184	25 210	25 579
Construction in Progress	3 521	68	485	422
Current and Other Assets	2 407	2 031	2 433	1 908
Goodwill and Intangible Assets	1 092	1 144	1 069	1 044
Total Assets before Regulatory Deferral	28 840	29 428	29 197	28 954
Regulatory Deferral Balance	1 161	1 266	1 314	1 412
	30 001	30 694	30 511	30 366
LIABILITIES AND EQUITY				
Long-Term Debt	22 598	23 121	23 370	23 003
Current and Other Liabilities	3 981	4 120	3 874	4 006
Provisions	44	54	55	53
Deferred Revenue	570	588	599	613
Retained Earnings	3 074	3 240	2 885	3 084
Accumulated Other Comprehensive Income	(560)	(642)	(504)	(499)
Total Liabilities and Equity before Regulatory Deferral	29 707	30 482	30 278	30 260
Regulatory Deferral Balance	294	213	233	106
	30 001	30 694	30 511	30 366

ELECTRIC OPERATIONS
CASH FLOW STATEMENT (Indirect)
(In Millions of Dollars)

For the year ended March 31	ACTUAL 2020/21	BUDGET 2021/22	FORECAST 2021/22	PRELIMINARY PLAN 2022/23
OPERATING ACTIVITIES				
Net Income	114	160	(203)	206
Add Back:				
Depreciation and Amortization	530	583	579	621
Net Finance Expense	782	1 019	994	1 039
Net Movement Impacts	14	(48)	(27)	1
Adjustments for Non-Cash Items	(101)	4	2	(14)
Adjustments for Non-Cash Working Capital Accounts	(62)	3	(32)	(33)
Interest Paid	(1 007)	(1 057)	(1 046)	(1 046)
Interest Received	4	3	3	4
Cash Provided by Operating Activities	274	668	270	778
FINANCING ACTIVITIES				
Proceeds from Long-Term Debt	2 560	1 410	2 093	1 100
Retirement of Long-Term Debt	(1 532)	(1 161)	(1 346)	(1 098)
Repayments from/(Advances to) Investment Entities	(24)	(29)	(12)	16
Proceeds from Partnership Issuances	24	29	12	7
Sinking Fund Investment Withdrawals	232	232	300	185
Sinking Fund Investment Purchases	(232)	(244)	(300)	(431)
Other	(4)	0	(1)	(1)
Cash Provided by Financing Activities	1 024	237	745	(223)
INVESTING ACTIVITIES				
Additions to Property, Plant and Equipment	(1 017)	(1 260)	(777)	(886)
Additions to Intangible Assets	(29)	(24)	(24)	(19)
Additions to Regulatory Deferral Balances	(45)	(85)	(97)	(98)
Contributions Received	45	41	24	20
Cash Paid to the City of Winnipeg	(16)	(16)	(16)	(16)
Cash Paid for Mitigation and Major Development Obligations	(21)	(118)	(99)	(64)
Other	(2)	(0)	(22)	(21)
Cash Used for Investing Activities	(1 085)	(1 463)	(1 011)	(1 085)
Net Increase (Decrease) in Cash	213	(557)	4	(530)
Cash at Beginning of Year	904	1 120	1 117	1 121
Cash at End of Year	1 117	563	1 121	592

ELECTRIC OPERATIONS
CASH FLOW STATEMENT (Direct)
(In Millions of Dollars)

For the year ended March 31	ACTUAL 2020/21	BUDGET 2021/22	FORECAST 2021/22	PRELIMINARY PLAN 2022/23
OPERATING ACTIVITIES				
Cash Receipts from Customers	2 291	2 649	2 477	2 793
Cash Paid to Suppliers and Employees	(1 014)	(927)	(1 164)	(974)
Interest Paid	(1 007)	(1 057)	(1 046)	(1 046)
Interest Received	4	3	3	4
Cash Provided by Operating Activities	274	668	270	778
FINANCING ACTIVITIES				
Proceeds from Long-Term Debt	2 560	1 410	2 093	1 100
Retirement of Long-Term Debt	(1 532)	(1 161)	(1 346)	(1 098)
Repayments from/(Advances to) External Entities	(24)	(29)	(12)	16
Proceeds from Partnership Issuances	24	29	12	7
Sinking Fund Investment Withdrawals	232	232	300	185
Sinking Fund Investment Purchases	(232)	(244)	(300)	(431)
Other	(4)	0	(1)	(1)
Cash Provided by Financing Activities	1 024	237	745	(223)
INVESTING ACTIVITIES				
Additions to Property, Plant and Equipment	(1 017)	(1 260)	(777)	(886)
Additions to Intangible Assets	(29)	(24)	(24)	(19)
Additions to Regulatory Deferral Balances	(45)	(85)	(97)	(98)
Contributions Received	45	41	24	20
Cash Paid to the City	(16)	(16)	(16)	(16)
Cash Paid for Mitigation and Major Development Obligations	(21)	(118)	(99)	(64)
Other	(2)	(0)	(22)	(21)
Cash Used for Investing Activities	(1 085)	(1 463)	(1 011)	(1 085)
Net Increase (Decrease) in Cash	213	(557)	4	(530)
Cash at Beginning of Year	904	1 120	1 117	1 121
Cash at End of Year	1 117	563	1 121	592

PUB MFR 4

Financial Results and Forecasts

Quarterly Financial Statements for the current fiscal year.

Manitoba Hydro’s Quarterly Financial Statements can be found on its website at the links below:

- Quarterly Report ending June 30, 2021:
  https://www.hydro.mb.ca/corporate/pdfs/quarterly_report_210630.pdf
- Quarterly Report ending September 30, 2021:
  https://www.hydro.mb.ca/corporate/pdfs/quarterly_report_210930.pdf

PUB MFR 5
Financial Results and Forecasts

MHEB 70th Annual Report for year ended March 31, 2021

Manitoba Hydro’s MHEB 70th Annual Report for year ended March 31, 2021 can be found on its website at the link below:
https://www.hydro.mb.ca/corporate/ar/pdf/annual_report_2020_21.pdf

PUB MFR 6
Financial Results and Forecasts

Details of the determination of each of the financial ratios (debt-to-equity, interest coverage, and capital coverage) for each of the years 2019/20 to 2022/23 and any future years as available. [2019/20 GRA PUB/MH 1-8]

Figures 1-4 below detail the determination of each of the financial ratios (debt-to-equity, EBITDA interest coverage and capital coverage) for actual results for 2019/20, 2020/21, the 2021/22 Budget, as well as 2021/22 Forecast and the 2022/23 Preliminary Plan.

Figures 5 and 6 provide two additional financial metrics: interest paid as a percent of total revenue and cash surplus/(deficiency) for core business activities.

Figure 7 provides a reconciliation of the values detailed in Figures 1- 6 to the actual and projected financial statements.

Figure 1. Debt Ratio Calculation

Debt Ratio
Manitoba Hydro (Electric Only)
($ millions)

		A	B	C	D	E	F	G	H	I	(F-G+H-I) / (A+B+C+D+E+F-G+H-I)
	Fiscal Year Ended	Retained Earnings	Unamortized Customer Contributions*	Accumulated Other Comprehensive Income	Non-Controlling Interest	BPIII & Major Capital Reserve	Long-Term Debt	Sinking Fund Investment	Short-Term Debt	Short-Term Investments	Debt Ratio
Actual	2020	2 958	522	(747)	302	285	22 877	-	-	904	86.9%
Actual	2021	3 074	554	(560)	323	246	23 736	-	-	1 117	86.1%
Budget	2022	3 240	600	(642)	343	164	24 192	22	-	563	86.4%
Forecast	2022	2 885	611	(504)	322	184	24 428	-	-	1 121	87.0%
Preliminary Plan	2023	3 084	625	(499)	62	57	24 433	246	-	592	87.6%

*Unamortized customer contributions includes a -$29M FMV adjustment for Centra Gas acquisition.

References in Projected Financial Statements:

Col A:	Figure 7, Electric Operations Projected Balance Sheet, Retained Earnings
Col B:	Figure 7, Electric Operations Projected Balance Sheet, Deferred Revenue plus Current Portion of Customer Contributions
Col C:	Figure 7, Electric Operations Projected Balance Sheet, Accumulated Other Comprehensive Income
Col D:	Figure 7, Electric Operations Projected Balance Sheet, Non-Controlling Interests
Col E:	Figure 7, Electric Operations Projected Balance Sheet, Other Non-Current Liabilities
Col F:	Figure 2, Column C
Col G:	Figure 7, Electric Operations Projected Balance Sheet, Sinking Fund Investments
Col H:	Figure 7, Electric Operations Projected Balance Sheet, Short-Term Debt
Col I:	Figure 7, Electric Operations Projected Balance Sheet, Cash and Cash Equivalents

Figure 2. Long-Term Debt Calculation

Calculation of Long-Term Debt
for input into Debt:Equity Ratio
($ millions)

	Fiscal Year Ended	**A** Long-Term Debt*	**B** Current Portion of Long-Term Debt	**C (A+B)** Long-Term Debt
Actual	2020	21 540	1 337	22 877
Actual	2021	22 615	1 121	23 736
Budget	2022	23 121	1 070	24 192
Forecast	2022	23 370	1 058	24 428
Preliminary Plan	2023	23 003	1 430	24 433

*Long-Term Debt includes a $17M FMV adjustment for Centra Gas acquisition.

References in Projected Financial Statements:
Col A: Figure 7, Electric Operations Projected Balance Sheet, Long-Term Debt
Col B: Figure 7, Electric Operations Projected Balance Sheet, Current Portion of Long-Term Debt

Figure 3. EBITDA Interest Coverage Ratio Calculation

EBITDA Interest Coverage
Electric
($ millions)

	Fiscal Year Ended	**A** Net Income	**B** Finance Expense (net)	**C** Capitalized Interest	**D** Depreciation Expense	**(A+B+C+D)/(B+C)** EBITDA Interest Coverage
Actual	2020	105	762	299	504	1.57
Actual	2021	116	775	359	521	1.56
Budget	2022	177	961	150	584	1.68
Forecast	2022	(190)	939	148	585	1.36
Preliminary Plan	2023	200	1 034	29	634	1.78

References in Projected Financial Statements:
Col A: Figure 7, Electric Operations Projected Operating Statement, Net Income Attributable to Manitoba Hydro
Col B: Figure 7, Electric Operations Projected Operating Statement, Finance Expense (including Net Movement) less Finance Income plus Finance Expense Corporate Allocation
Col C: Figure 7, Electric Operations Projected Operating Statement, Capitalized Interest, Finance Expense Net Movement
Col D: Figure 7, Electric Operations Projected Operating Statement, Depreciation and Amortization (including Net Movement) plus Depreciation Corporate Allocation

The calculation of the capital coverage ratio is presented below, however Manitoba Hydro is no longer uses this metric for management purposes. Manitoba Hydro believes the capital coverage ratio, in its current form, has limited effectiveness given the quantum of the core business cash requirements that are excluded from the calculation.

Figure 4. Capital Coverage Ratio Calculation

Capital Coverage Ratio
Excluding Major Generation
Electric
($ millions)

		A	B	C (A+B)	D	E (C/D)
	Fiscal Year Ended	Funds from Operations	Capitalized Interest	Internally Generated Funds	Capital Expenditures	Capital Coverage
Actual	2020	382	299	681	545	1.25
Actual	2021	274	359	633	482	1.31
Budget	2022	668	150	819	526	1.56
Forecast	2022	270	148	418	523	0.80
Preliminary Plan	2023	778	29	806	545	1.48

References in Projected Financial Statements:

Col A:	Figure 7, Electric Operations Projected Cash Flow Statement, Cash Flow from Operating Activities
Col B:	Figure 7, Electric Operations Projected Operating Statement, Capitalized Interest, Finance Expense Net Movement
Col D:	PUB MFR 19 , Electric Business Operations Capital Total

Interest paid as a percentage of total revenue is calculated in Figure 5 below and is a measure of the portion of every dollar of revenue that is needed to service the interest payments on the outstanding debt. Several major capital projects are now in-service and the Keeyask Generating Station is expected to be fully in-service by March 31, 2022. Beginning in 2022/23, Manitoba Hydro can no longer shelter the interest payments on these projects as capitalized interest. As shown in Figure 5, roughly 40 cents from every revenue dollar is being used to pay interest on the outstanding debt.

Figure 5 - Interest Paid as a % of Total Revenue

Interest Paid as a % of Total Revenue
Electric
($ millions)

		A	**B**	**C**
				(A/B)
	Fiscal Year Ended	Interest Paid	Total Revenue	Interest Paid as a % of Total Revenue
Actual	2020	1 010	2 196	46%
Actual	2021	1 007	2 353	43%
Budget	2022	1 057	2 620	40%
Forecast	2022	1 046	2 485	42%
Preliminary Plan	2023	1 046	2 802	37%

References in Projected Financial Statements:

Col A:	Figure 7, Electric Operations Projected Cash Flow Statement, Cash Flow from Operating Activities
Col B:	Figure 7, Electric Operations Projected Operating Statement, Total Revenues

Figures 6a-d below contain the supporting details of the Cash Surplus/(Deficiency) for Core Business Activities metric. Excluding net cash expenditures and financing related costs of the major capital projects, a surplus indicates sufficient cash is available to cover cash operating expenses, business operations capital and other investing activities related to core business activities. A deficiency indicates borrowings are required to fund a portion of the business activities other than the major capital projects. This is a cash flow metric and is derived primarily from items on the Cash Flow Statement.

The Cash Surplus/(Deficiency) for Core Business Activities is calculated in Figure 6a below. The total financing requirements are derived by subtracting Cash Provided by Operating

Activities from Cash Used for Investing Activities. If the total financing requirements are greater than the financing requirements related to the major capital projects, a cash deficiency exists, and Manitoba Hydro is borrowing to fund its core business activities.

Figure 6a - Cash Surplus/(Deficiency) Borrowing to Fund Core Business Operations

	(in Millions)	Actual 2019/20
Figure 7	Cash Provided by Operating Activities	$382
Figure 7	Cash Used for Investing Activities	($1 989)
	Financing Requirements	($1 607)

	(in Millions)	Major Capital Projects	Core Business Activities	Total
Figure 6d	Financing Requirements	($1 600)	($7)	($1 607)
	Surplus Cash for Core Business	$0	$0	$0
	Drawdown of Pre-Funded Cash	$0	$0	$0
	Incremental Borrowings	$1 600	$7	$1 607

	(in Millions)	Actual 2020/21
Figure 7	Cash Provided by Operating Activities	$274
Figure 7	Cash Used for Investing Activities	($1 085)
	Financing Requirements	($811)

	(in Millions)	Major Capital Projects	Core Business Activities	Total
Figure 6d	Financing Requirements	($873)	$0	($873)
	Surplus Cash for Core Business	$62	$0	$62
	Drawdown of Pre-Funded Cash	$0	$0	$0
	Incremental Borrowings	$811	$0	$811

	(in Millions)	Budget 2021/22
Figure 7	Cash Provided by Operating Activities	$668
Figure 7	Cash Used for Investing Activities	($1 463)
	Financing Requirements	($794)

	(in Millions)	Major Capital Projects	Core Business Activities	Total
Figure 6d	Financing Requirements	($856)	$0	($856)
	Surplus Cash for Core Business	$62	$0	$62
	Drawdown of Pre-Funded Cash	$0	$0	$0
	Incremental Borrowings	$794	$0	$794

	(in Millions)	Forecast 2021/22
Figure 7	Cash Provided by Operating Activities	$270
Figure 7	Cash Used for Investing Activities	($1 011)
	Financing Requirements	($741)

	(in Millions)	Major Capital Projects	Core Business Activities	Total
Figure 6d	Financing Requirements	($392)	($348)	($741)
	Surplus Cash for Core Business	$0	$0	$0
	Drawdown of Pre-Funded Cash	$0	$0	$0
	Incremental Borrowings	$392	$348	$741

	(in Millions)	Prelim. Plan 2022/23
Figure 7	Cash Provided by Operating Activities	$778
Figure 7	Cash Used for Investing Activities	($1 085)
	Financing Requirements	($307)

	(in Millions)	Major Capital Projects	Core Business Activities	Total
Figure 6d	Financing Requirements	($359)	$0	($359)
	Surplus Cash for Core Business	$51	$0	$51
	Drawdown of Pre-Funded Cash	$307	$0	$307
	Incremental Borrowings	$0	$0	$0

In order to isolate the financing requirements related to the major capital projects, the Cash Used for Investing section of the Cash Flow Statement has been restated in Figure 6b to identify which amounts of Additions to Property, Plant & Equipment, Intangible Assets, and Customer Contributions are used for Major Capital and for Core Business Capital. The remaining investing activities on the cash flow statement are related to spending on other core business activities such as investments in Demand Side Management, site restoration, and regulatory costs as well as mitigation payments to Indigenous and other communities and payments to the City of Winnipeg. For the 2021/22 Forecast and the 2022/23 Preliminary Plan, total investing activities related to core business activities are projected to be $748 million and $737 million respectively.

Figure 6b - Cash Used for Investing Activities
(in Millions)

			2019/20 Actual	2020/21 Actual	2021/22 Approved Budget	2021/22 Forecast	2022/23 Preliminary Plan
		Additions to Property, Plant and Equipment, Intangible Assets & Contributions					
	A	Major Capital	(1 189)	(520)	(723)	(262)	(348)
	B	Core Business Capital	(529)	(466)	(511)	(507)	(529)
	A	Other Major Capital	(131)	(13)	-	-	-
	C	Additions to Regulatory Deferral Balances*	(77)	(45)	(85)	(97)	(98)
	C	Contributions Reimbursed	(4)	(3)	(9)	(8)	(9)
	C	Cash Paid to the City of Winnipeg	(16)	(16)	(16)	(16)	(16)
	C	Cash Paid for Mitigation and Major Development Obligations **	(44)	(21)	(118)	(99)	(64)
	C	Other***	1	(2)	(0)	(22)	(21)
Figure 7		**Cash Used for Investing Activities**	(1 989)	(1 085)	(1 463)	(1 011)	(1 085)
	A	Total Cash Used for Investing - Major Capital	(1 320)	(532)	(723)	(262)	(348)
	B	Total Cash Used for Investing - Core Business Capital	(529)	(466)	(511)	(507)	(529)
	C	Total Cash Used for Other Core Business Activities	(140)	(87)	(229)	(242)	(208)
		Total Cash Used for Core Business Activities	(669)	(553)	(740)	(748)	(737)
Figure 7		**Total Cash Used for Investing Activities**	**(1 989)**	**(1 085)**	**(1 463)**	**(1 011)**	**(1 085)**

* *Additions to Regulatory Deferral Balances include investment in Demand Side Management, Site Restoration, Regulatory costs & Ineligible Overhead*

** *Cash Paid for Mitigation & Major Development include payments to Indigenous and other communities as a result of adverse effects of past hydraulic generation*

*** *Other Investing Activities include payments relating to transmission service rights on the GNTL, land settlements & payments for Lake Sturgeon*

Actual and forecasted capital expenditures are presented on an accrual basis. Figure 6c provides a reconciliation between the cash payments for both Core Business Capital and Major Capital identified in Figure 6b above and the Capital Expenditures shown in PUB MFR 19. The differences between the amounts on the cash flow statement and the amounts reported as capital expenditures in PUB MFR 19 are due to accruals (recognition of when work is completed on a capital project) and the timing of cash disbursements for the work completed, as well as capitalized interest.

Figure 6c - Reconciliation of Cash Used for Investing to Total Capital Expenditures
(in Millions)

		2019/20 Actual	2020/21 Actual	2021/22 Approved Budget	2021/22 Forecast	2022/23 Preliminary Plan
	Major Capital					
Figure 6b	Total Cash Used for Major Capital - PP&E, Intangible & Contributions	1 189	520	723	262	348
	Capitalized Interest for Major Capital	260	324	68	69	-
	Capital Expenditure Accruals	4	(51)	(71)	23	(33)
MFR19	**Total Capital Expenditures - Major Capital**	**1 453**	**793**	**720**	**354**	**315**
	Core Business Capital					
Figure 6b	Total Cash Used for Investing - Core Business Capital PPE, Intangible & Contributions	529	466	511	507	529
	Capitalized Interest for Core Business Capital	16	16	15	16	16
MFR19	**Total Capital Expenditures - Electric Core Business Capital**	**545**	**482**	**526**	**523**	**545**
	Other Major Capital Projects					
Figure 6b	Total Cash Used for Investing - Other Major Capital Projects	131	13	-	-	-
	Capitalized Interest for Other Major Capital Projects	21	4	-	-	-
	Total Capital Expenditures - Other Major Capital Projects	**152**	**16**	**-**	**-**	**-**

Since Manitoba Hydro is completely debt financing the major projects, the total financing requirements related to the major projects is derived by taking the sum of the amounts on the cash flow statement shown in Figure 6b and the capitalized interest from Figure 6c. Figure 6d summarizes the total financing requirements related to Major Capital Projects.

Figure 6d - Total Financing Requirments for Major Capital
(in Millions)

		2019/20 Actual	2020/21 Actual	2021/22 Approved Budget	2021/22 Forecast	2022/23 Preliminary Plan
Figure 6a	Total Cash Used for Major Capital - PP&E, Intangible & Contributions	1 189	520	723	262	348
Figure 6a	Total Cash Used for Investing - Other Major Capital Projects	131	13	-	-	-
Figure 6c	Capitalized Interest for Major Capital	260	324	68	69	-
Figure 6c	Capitalized Interest for Other Major Capital Projects	21	4	-	-	-
Figure 7	Keeyask In-Service Deferral - Net Movement - Net Finance Expense	-	13	65	61	11
Figure 6a	**Financing Requirements - Major Capital**	**1 600**	**873**	**856**	**392**	**359**

Figure 7. Actual & Projected Financial Statements

ELECTRIC OPERATIONS
OPERATING STATEMENT
(In Millions of Dollars)

		For the year ended March 31	**Actual 2019/20**	**Actual 2020/21**	**Budget 2021/22**	**Forecast 2021/22**	**Preliminary Plan 2022/23**
		REVENUES					
		Domestic Revenue					
		at approved rates	1 702	1 714	1 751	1 792	1 769
		additional	-	-	35	27	88
		Extraprovincial	468	611	806	637	916
		Other	26	28	29	29	29
Figure 5	Column B		2 196	2 353	2 620	2 485	2 802
		EXPENSES					
		Operating and Administrative	512	534	557	557	595
		Gross Finance Expense	*1 097*	*1 152*	*1 127*	*1 104*	*1 080*
Figure 3, 4	Column C, B	*Capitalized Interest*	*(299)*	*(346)*	*(85)*	*(87)*	*(18)*
Figure 3	Column B	Finance Expense	798	806	1 042	1 017	1 062
Figure 3	Column B	Finance Income	(42)	(24)	(23)	(23)	(23)
Figure 3	Column D	Depreciation and Amortization	481	530	583	579	621
		Water Rentals and Assessments	126	128	131	98	134
		Fuel and Power Purchased	98	184	166	428	157
		Capital and Other Taxes	146	149	154	152	161
		Other Expenses	70	45	77	87	106
Figure 3	Column B	*Finance Expense*	*6*	*6*	*6*	*6*	*6*
Figure 3	Column D	*Depreciation and Amortization*	*1*	*1*	*1*	*1*	*1*
Figure 3	Column B	*Other Revenues*	*0*	*0*	*0*	*0*	*0*
		Corporate Allocation	8	8	8	8	8
			2 197	2 360	2 694	2 902	2 820
		Net Income before Net Movement in Reg. Deferral	(1)	(7)	(74)	(417)	(19)
		General Consumers Revenue	*(32)*	*(38)*	*(17)*	*(29)*	*-*
		Other Revenue	*77*	*77*	*100*	*90*	*127*
		Operating and Administrative	*20*	*20*	*20*	*20*	*20*
Figure 3	Column D	*Depreciation and Amortization*	*(21)*	*10*	*(1)*	*(5)*	*(12)*
		Other Expenses	*62*	*39*	*67*	*77*	*78*
Figure 3, 4	Column C, B						
Figure 6d		*Finance Expense*	*-*	*13*	*65*	*61*	*11*
		Net Movement in Regulatory Deferral	106	121	234	214	225
		Net Income	105	114	160	(203)	206
Figure 3	Column A	**Net Income Attributable to:**					
		Manitoba Hydro	**105**	**116**	**177**	**(190)**	**200**
		Total Non-Controlling Interests	-	(2)	(16)	(13)	6
		Approved Percent Increase	2.50%	2.90%			
		Approved or Proposed Percent Increase			3.50%	5.00%	0.00%

ELECTRIC OPERATIONS
BALANCE SHEET
(In Millions of Dollars)

			Actual	**Actual**	**Budget**	**Forecast**	**Preliminary Plan**
		For the year ended March 31	**2019/20**	**2020/21**	**2021/22**	**2021/22**	**2022/23**
		ASSETS					
		Plant in Service	18 946	24 286	29 253	28 184	29 122
		Accumulated Depreciation	(2 062)	(2 466)	(3 069)	(2 974)	(3 543)
			16 884	21 820	26 184	25 210	25 579
		Net Plant in Service					
		Construction in Progress	7 643	3 521	68	485	422
Figure 1	Column I	*Cash and Cash Equivalents*	*904*	*1 117*	*563*	*1 121*	*592*
		Other Current Assets	*523*	*519*	*563*	*509*	*623*
Figure 1	Column G	*Sinking Fund Investments*	*-*	*-*	*22*	*-*	*246*
		Other Non-Current Assets	*780*	*771*	*884*	*802*	*448*
		Current and Other Assets	2 207	2 407	2 031	2 433	1 908
		Goodwill and Intangible Assets	815	1 092	1 144	1 069	1 044
		Total Assets before Regulatory Deferral	27 549	28 840	29 428	29 197	28 954
		Regulatory Deferral Balance	1 080	1 161	1 266	1 314	1 412
			28 629	30 001	30 694	30 511	30 366
		LIABILITIES AND EQUITY					
Figure 2	Column A	Long-Term Debt	21 523	22 598	23 121	23 370	23 003
Figure 2	Column B	*Current Portion of Long-Term Debt*	*1 337*	*1 121*	*1 070*	*1 058*	*1 430*
Figure 1	Column B	*Current Portion of Customer Contributions*	*12*	*13*	*12*	*12*	*12*
		Other Current Liabilities	*767*	*733*	*612*	*624*	*625*
Figure 1	Column H	*Short Term Debt*	*-*	*-*	*-*	*-*	*-*
Figure 1	Column D	*Non-Controlling Interests*	*302*	*323*	*343*	*322*	*62*
Figure 1	Column E	*Other Non-Current Liabilities*	*1 557*	*1 791*	*2 082*	*1 857*	*1 877*
		Current and Other Liabilities	3 975	3 981	4 120	3 874	4 006
		Provisions	47	44	54	55	53
Figure 1	Column B	Deferred Revenue *	539	570	588	599	613
Figure 1	Column A	Retained Earnings	2 958	3 074	3 240	2 885	3 084
Figure 1	Column C	Accumulated Other Comprehensive Income	(747)	(560)	(642)	(504)	(499)
		Total Liabilities and Equity before Regulatory Deferral	28 295	29 707	30 482	30 278	30 260
		Regulatory Deferral Balance	334	294	213	233	106
			28 629	30 001	30 694	30 511	30 366

* These balances are net of the current portions of Deferred Revenue which are included under Current and Other Liabilities

ELECTRIC OPERATIONS
CASH FLOW STATEMENT (INDIRECT)
(In Millions of Dollars)

		For the year ended March 31	**Actual 2019/20**	**Actual 2020/21**	**Budget 2021/22**	**Forecast 2021/22**	**Preliminary Plan 2022/23**
		OPERATING ACTIVITIES					
		Net Income	105	114	160	(203)	206
		Add Back:					
		Depreciation and Amortization	481	530	583	579	621
		Net Finance Expense	756	782	1 019	994	1 039
		Net Movement Impacts	54	14	(48)	(27)	1
		Adjustments for Non-Cash Items	(80)	(101)	4	2	(14)
		Adjustments for Non-Cash Working Capital Accounts	55	(62)	3	(32)	(33)
Figure 5	Column A	Interest Paid	(1 010)	(1 007)	(1 057)	(1 046)	(1 046)
		Interest Received	21	4	3	3	4
Figure 4 Figure 6 a, b	Column A	**Cash Provided by Operating Activities**	382	274	668	270	778
		FINANCING ACTIVITIES					
		Proceeds from Long-Term Debt	2 170	2 560	1 410	2 093	1 100
		Retirement of Long-Term Debt	(542)	(1 532)	(1 161)	(1 346)	(1 098)
		Repayments from/(Advances to) External Entities	(48)	(24)	(29)	(12)	16
		Proceeds from Partnership Issuances	47	24	29	12	7
		Sinking Fund Investment Withdrawals	225	232	232	300	185
		Sinking Fund Investment Purchases	(225)	(232)	(244)	(300)	(431)
		Other	(3)	(4)	-	(1)	(1)
		Cash Provided by Financing Activities	1 624	1 024	237	745	(223)
		INVESTING ACTIVITIES					
		Additions to Property, Plant and Equipment	(1 726)	(1 017)	(1 260)	(777)	(886)
		Additions to Intangible Assets	(163)	(29)	(24)	(24)	(19)
		Additions to Regulatory Deferral Balances	(77)	(45)	(85)	(97)	(98)
		Contributions Received	36	45	41	24	20
		Cash Paid to the City	(16)	(16)	(16)	(16)	(16)
		Cash Paid for Mitigation and Major Development Obligations	(44)	(21)	(118)	(99)	(64)
		Other	1	(2)	(0)	(22)	(21)
Figure 6 a, b		**Cash Used for Investing Activities**	(1 989)	(1 085)	(1 463)	(1 011)	(1 085)
		Net Increase (Decrease) in Cash	17	213	(557)	4	(530)
		Cash at Beginning of Year	887	904	1 120	1 117	1 121
		Cash at End of Year	904	1 117	563	1 121	592

PUB MFR 7

Financial Results and Forecasts

Detail of the Net Movement in Regulatory Deferral Accounts including Opening and Closing Balances, Additions, and Amortizations. [2019 GRA - PUB/MH 10 a-c]

Please see the following for a continuity schedule providing the opening and closing balances, additions and amortization for each regulatory deferral account, including 2020/21 Actuals, 2021/22 Forecast and 2022/23 Preliminary Plan.

Manitoba Hydro
2021/22 Interim Rate Application
(In thousands of dollars)

	Actuals 2020/21	Forecast 2021/22	Preliminary Plan 2022/23
Opening balance of net regulatory deferral			
DSM programs	272 065	257 307	273 142
Site remediation	38 213	43 426	54 704
Regulatory costs	6 988	2 246	2 484
Acquisition costs	7 712	7 020	6 328
Change in depreciation method	198 728	240 120	287 508
Deferred ineligible overhead	113 179	129 517	145 262
Loss on retirement or disposal of assets	35 463	71 388	73 888
Affordable Energy Fund	3 825	3 781	3 781
Conawapa	353 950	341 323	328 696
Keeyask in-service deferral	-	15 935	89 526
DSM deferral debit balance	48 800	48 800	48 800
DSM deferral credit balance	(48 800)	(48 800)	(48 800)
Bipole III deferral	(252 169)	(174 771)	(97 373)
Major capital project deferral	(32 515)	(70 518)	(86 833)
	745 439	866 774	1 081 113
Additions to regulatory deferral accounts			
DSM programs	27 786	58 318	59 129
Site remediation	9 920	16 208	15 200
Regulatory costs	561	2 321	4 097
Acquisition costs	-	-	-
Change in depreciation method	41 392	47 388	54 721
Deferred ineligible overhead	20 200	20 200	20 200
Loss on retirement or disposal of assets	35 925	2 500	2 500
Affordable Energy Fund	43	-	-
Conawapa	-	-	-
Keeyask in-service deferral	15 935	73 591	14 063
DSM deferral debit balance	-	-	-
DSM deferral credit balance	-	-	-
Bipole III deferral	-	-	-
Major capital project deferral	(38 003)	(28 720)	-
	113 759	191 806	169 910
Amortization of regulatory deferral accounts			
DSM programs	(42 544)	(42 483)	(45 583)
Site remediation	(4 707)	(4 930)	(5 645)
Regulatory costs	(5 303)	(2 083)	(1 736)
Acquisition costs	(692)	(692)	(692)
Change in depreciation method	-	-	-
Deferred ineligible overhead	(3 862)	(4 455)	(5 050)
Loss on retirement or disposal of assets	-	-	-
Affordable Energy Fund	(87)	-	-
Conawapa	(12 627)	(12 627)	(12 627)
Keeyask in-service deferral	-	-	(1 014)
DSM deferral debit balance	-	-	-
DSM deferral credit balance	-	-	-
Bipole III deferral	77 398	77 398	77 398
Major capital project deferral		12 405	49 619
	7 576	22 533	54 670
Closing balance of net regulatory deferral			
DSM programs	257 307	273 142	286 688
Site remediation	43 426	54 704	64 259
Regulatory costs	2 246	2 484	4 845
Acquisition costs	7 020	6 328	5 636
Change in depreciation method	240 120	287 508	342 229
Deferred ineligible overhead	129 517	145 262	160 412
Loss on retirement or disposal of assets	71 388	73 888	76 388
Affordable Energy Fund	3 781	3 781	3 781
Conawapa	341 323	328 696	316 068
Keeyask in-service deferral	15 935	89 526	102 575
DSM deferral debit balance	48 800	48 800	48 800
DSM deferral credit balance	(48 800)	(48 800)	(48 800)
Bipole III deferral	(174 771)	(97 373)	(19 974)
Major capital project deferral	(70 518)	(86 833)	(37 214)
	866 774	1 081 113	1 305 693

PUB MFR 8

Financial Results and Forecasts

A table that shows the incremental and cumulative impacts to retained earnings of a 5- and 7-year drought, beginning in 2021/22. [2017/18 GRA PUB/MH II-40].

Manitoba Hydro does not currently have a long-term financial forecast or long-term underlying forecasts such as the electric load forecast and export price forecast, therefore this response has been prepared with provisional information for the period following 2022/23.

The response is limited to the impacts of drought on flow related revenues and costs and does not include impacts to borrowing or retained earnings.

Manitoba Hydro’s methodology for the calculation of the drought impact is based on the difference in net extraprovincial revenues over the flow years of a representative drought with respect to the net extraprovincial revenues based on the average of all flow cases used in the simulation. The flow years, 1987/88 to 1991/92, inclusive, constitutes the representative 5-year drought. Flow years, 1936/37 to 1942/43, inclusive, make up the representative 7-year drought. For the analysis summarized in Table 1, the first year of each representative drought sequence is replaced by 2021/22 which is composed of actual flows and hydraulic generation through September 2021 and, projected flows for the remainder of the year.

Table 1 below provides the net extraprovincial revenue impacts (excluding financing costs) of a 5-year and a 7-year drought, with onset of the drought in 2021/22.

Drought Duration	Fiscal Years	Flow Years	Net Extraprovincial Revenue Impact [billions of nominal $ CDN] (Excluding Finance Expense)
5 years	2021/22-2025/26	2021/22 Forecast, 1988/89-1991/92	$ 1.3
7 years	2021/22-2027/28	2021/22 Forecast, 1937/38-1942/43	$ 1.8

Manitoba Hydro’s Application provides information on the additional borrowings required to fund core operations in 2021/22 of $348 million, as a result of the financial impact of the drought. While Manitoba Hydro is unable to quantify the finance expense impact of a prolonged drought at this time, the impacts would be significant and would occur over the period advancing the requirements and level of incremental debt and associated finance expense. In addition, it is important to recognize that retained earnings are not a cash reserve, as demonstrated by incremental borrowings in the current year. Absent of any rate relief, retained earnings will deteriorate due to the annual net losses and debt will increase as a result of additional borrowings needed to finance the cash flow deficiencies. This would place considerable upward pressure on the debt ratio that is already high as the major capital projects near completion. As such, retained earning alone are not sufficient to address the financial impact of the uncertainties faced by Manitoba Hydro.

PUB MFR 9

Financial Results and Forecasts

Revenue requirements including cost components (Finance/Depreciation/ Operating/Water Rentals/F&PP/Taxes) for the years 2019/20, to 2023/24 for each of the following:

- **Keeyask generating station**
- **Manitoba-Minnesota Transmission Project**
- **Great Northern Transmission Line**
- **Bipole III and Riel station**
- **Birtle Transmission Project**
- **Business Operations Capital**

[2019/20 GRA PUB/MH I-9]

This MFR seeks to simulate the Revenue Requirement impact of individual Major Capital projects as well as incremental Business Operations Capital and Demand Side Management. While this MFR is informative, the projected financial statements in PUB MFR 3 provide a more complete view of the utility's financial requirements in each year. For example, the projected operating statement will demonstrate if revenues are sufficient to cover the expenses plus an adequate return in the form of net income.

The type of analysis requested in this MFR is limited by virtue of treating individual projects on an incremental cost basis. While costs such as depreciation expense, water rentals, and operating & administrative expenses may be estimated and may be directly attributable to a project, other costs such as finance expense and capital taxes are not readily estimated on an incremental basis. Furthermore, this analysis disregards the estimated export revenues to be obtained through sales of surplus energy associated with new electric generating plant.

Notwithstanding the important concerns and limiting factors identified above, the requested analysis has been provided in the tables below with the exception of actual results. This analysis has been provided in the past only on a prospective basis; providing a similar analysis on actual results implies a level of accuracy that cannot be ascertained due to the identified limitations. Reliance on the estimated carrying and operating costs in these schedules as a representation of revenue requirement must be viewed with caution considering the inherent limitations of the analysis, estimation assumptions and methods described below.

1. Manitoba Hydro issues debt based on the consolidated cash requirements of the Corporation and does not assign specific debt issues on a project-by-project basis. As such, finance expense attributable to a specific project is estimated for the purposes of this analysis by applying Manitoba Hydro's average cost of debt to the asset's net book value (projected in-service cost net of accumulated depreciation). Using the net book value as the principal outstanding for debt associated with an asset assumes that annual depreciation expense approximates revenues/cash flow available to reduce debt over the life of the asset. This estimation method does not consider that extraprovincial revenues partially offset the costs. As a result, the implied impacts to customers for each project may not be representative.

2. Capital taxes are estimated by applying a fixed 0.5% capital tax rate to construction work in progress until the asset is in-service and the net book value thereafter. Similar to finance expense, the use of net book value as a proxy for paid up capital to estimate capital taxes may result in implied impacts to customers for each project that are not representative.

3. Manitoba Hydro operates the integrated hydro-electric system to optimize the efficient use of water resources and maximize overall Corporate revenues for the benefit of customers. The output of one facility may not be maximized on its own but contributes to the maximization of the system as a whole. The assumption that depreciation expense approximates the revenue attributable to a project may be reasonable for understanding costs but does not reflect the value of a particular asset to the integrated system and should not be used for resource planning purposes.

4. The analysis considers only the prospective costs of asset additions and does not address the ability of revenues at current PUB approved rates to cover ongoing carrying and operating costs of existing assets. Current domestic rates are lower than what they otherwise would be if Manitoba Hydro did not have extraprovincial revenues that allow it to partially offset costs for domestic customers. In years of low water flow or low opportunity export prices, domestic revenues are not sufficient to cover the resulting reduction in extraprovincial revenues.

5. The analysis does not indicate the level of annual earnings required to achieve financial targets.

Considering the above, the summation of total costs in the following tables may not accurately reflect the overall revenue requirement for Manitoba Hydro or how a particular asset contributes to the Corporation's overall revenue requirement.

KEEYASK (ISD 2020/21)
(In Millions of Dollars)

For the year ended March 31	Forecast 2021/22	Preliminary Plan 2022/23	Preliminary Plan 2023/24
Finance Expense	261	329	355
O&A Costs	7	23	20
Depreciation & Amortization	68	97	101
Water Rentals	7	18	18
Capital Tax	34	40	41
Other Expenses	-	17	-
Net Movement	(79)	(24)	(9)
Non-Controlling Interest	(16)	-	-
Gross Impact	282	499	526
Amortization of Major Capital Reserve	(12)	(50)	(37)
Net Impact	270	450	488

The Keeyask revenue requirement calculation includes the net movement impacts including Keeyask In-Service Deferral discussed in Section 4.4 of the Application, non-controlling interest and impacts to Other Expenses related to the expected execution of clauses in the Joint Keeyask Development Agreement ("JKDA") on the Final Closing Date (6 months after the last unit at Keeyask is commissioned).

MANITOBA-MINNESOTA TRANSMISSION PROJECT
(In Millions of Dollars)

For the year ended March 31	Forecast 2021/22	Preliminary Plan 2022/23	Preliminary Plan 2023/24
Finance Expense	20	19	19
O&A Costs	0	0	0
Depreciation & Amortization	8	8	8
Capital Tax	2	2	2
	30	29	29

Compared to PUB/MH I-9 (Updated) from the 2019/20 GRA, there are no material changes to the overall revenue requirement related to the Manitoba-Minnesota Transmission Project ("MMTP").

GREAT NORTHERN TRANSMISSION LINE
(In Millions of Dollars)

For the year ended March 31	Forecast 2021/22	Preliminary Plan 2022/23	Preliminary Plan 2023/24
Finance Expense	27	26	25
Fuel & Power Purchased	39	38	38
	66	64	64

Compared to PUB/MH I-9 (Updated) from the 2019/20 GRA, the projected annual revenue requirement of the GNTL project has decreased by approximately $30 million. The decrease is largely driven by a lower project cost as a result of effective management of the project risks with minimal use of the project contingency. The revised revenue requirement reflects lower scheduling and service agreement fees also driven by the lower total project cost. In addition, the amortization related to the intangible assets and transmission charges are now being recorded as charges in the Fuel and Power Purchased expense line item on the income statement.

BIPOLE III, RIEL STATION & KEEWATINOHK CONVERTER STATIONS ($4.61B)
(In Millions of Dollars)

For the year ended March 31	Forecast 2021/22	Preliminary Plan 2022/23	Preliminary Plan 2023/24
Finance Expense	203	192	193
O&A Costs	11	11	11
Depreciation & Amortization	90	91	91
Capital Tax	23	22	22
Gross Impact	327	316	316
Amortization of BPIII Reserve	(77)	(77)	(20)
Net Impact	249	239	296

Compared to PUB/MH I-9 (Updated) from the 2019/20 GRA, the projected annual revenue requirement for the Bipole III project has decreased by approximately $50 million. The decrease is due to both lower finance expense and depreciation expense driven by a decrease in the total project cost, a lower weighted average cost of debt and a lower composite depreciation rate.

BIRTLE TRANSMISSION
(In Millions of Dollars)

For the year ended March 31	**Forecast 2021/22**	**Preliminary Plan 2022/23**	**Preliminary Plan 2023/24**
Finance Expense	2	2	2
O&A Costs	0	0	0
Depreciation & Amortization	1	1	1
Capital Tax	0	0	0
	3	3	3

BUSINESS OPERATIONS CAPITAL
(In Millions of Dollars)

For the year ended March 31	**Forecast 2021/22**	**Preliminary Plan 2022/23**	**Preliminary Plan 2023/24**
Finance Expense	11	33	57
Depreciation & Amortization	8	26	46
Capital Tax	4	7	10
	23	66	113

DSM
(In Millions of Dollars)

For the year ended March 31	**Forecast 2021/22**	**Preliminary Plan 2022/23**	**Preliminary Plan 2023/24**
Finance Expense	1	4	6
Amortization	-	6	12
Capital Tax	0	1	1
	2	10	18

The estimated annual revenue requirement impacts for Business Operations Capital and DSM for the 2021/22 and the 2022/23 fiscal years shown above are not directly comparable to the same fiscal years found in PUB/MH I-9 (Updated) from the 2019/20 GRA as those years included the cumulative impacts of the projected spend in forecast years 2019/20 and 2020/21.

PUB MFR 10

Financial Results and Forecasts

Continuity schedules showing the deferrals and amortization (or proposed amortization) of the Bipole III Deferral Account and the Major Capital Deferral Account. [2019/20 GRA PUB/MH I-11]

The following table provides a continuity schedule of the Bipole III deferral account showing amounts deferred by fiscal year and straight line amortization over a 5 year period commencing July 2018 as directed by the PUB in Order 59/18.

Bipole III Deferral
(in Millions of Dollars)

Year	Amount Deferred	Amortization	Ending Balance
2013/14	19		19
2014/15	30		49
2015/16	51		100
2016/17	96		196
2017/18	152		348
2018/19	39	(57)	330
2019/20	-	(77)	252
2020/21	-	(77)	175
2021/22	-	(77)	97
2022/23	-	(77)	20
2023/24	-	(20)	-

The following table provides a continuity schedule of the Major Capital Project Deferral Account showing amounts deferred by fiscal year and proposed straight line amortization over a 2-year period commencing January 1, 2022.

Major Capital Project Deferral
(in Millions of Dollars)

Year	Amount Deferred	Amortization	Ending Balance
2019/20	33		33
2020/21	38		71
2021/22	29	(12)	87
2022/23	-	(50)	37
2023/24	-	(37)	-

PUB MFR 11

Financial Results and Forecasts

Incremental revenues and unit revenues from Keeyask by year, broken down by firm and opportunity sales. [2017/18 GRA PUB MFR 82]

The confidential portions of this response have been highlighted.

Public disclosure of the response to this MFR (or portions thereof) would result in the release of information considered to be confidential and commercially sensitive. As such, this information is being filed in confidence with the Public Utilities Board only.

The following schedules have been prepared using simplifying assumptions with respect to the allocation of dependable energy that is used to serve firm sales, and consequently the revenue to attribute to Keeyask energy. There are many operational decisions made to manage reservoir levels and stream flow in order to maximize the overall value of energy generated by an integrated hydro-electric system. These decisions involve optimizing the collective generation output of the hydro-electric facilities on the system, thermal generation, and energy purchases. The output of individual facilities may appear to be suboptimal in order to benefit the system as a whole. As a result, it is an arbitrary exercise to attribute the generation of an individual facility to serving any of Manitoba demand, the overall portfolio of firm sales or any one firm sale in an integrated hydro-electric system.

The first schedule calculates the total system average unit revenues (at generation) for firm export and non-firm export sales. The appropriate average unit revenue is applied to the Keeyask energy allocated for firm export and non-firm export energy to derive the revenue for each category.

For the purposes of this response, the Keeyask energy has been allocated between firm exports and opportunity exports under three sets of assumptions in order to provide an indicative range of revenue allocations as follows:

- Scenario 1: All of Keeyask energy assumed to be sold as opportunity sales.
- Scenario 2: Keeyask firm energy is assumed to serve the MP250 sale plus an amount of remaining firm contracts based proportionally on Keeyask generation to total hydraulic generation.
- Scenario 3: All of Keeyask firm energy serves firm export sales.

In all three scenarios, Keeyask energy is not required to serve domestic load for the years in question.

	Total System Sales @ Generation								
Fiscal	Firm Export Revenue [CDN $M]	Non-Firm Export Revenue [CDN $M]	Total Export Revenue [CDN $M]	Firm Export Energy [GWh]	Non-Firm Export Energy [GWh]	Total Export Energy [GWh]	Firm Export Average Unit Revenue [CDN $/MWh]	Non-Firm Export Average Unit Revenue [CDN $/MWh]	Total Export Average Unit Revenue [CDN $/MWh]
2021/22	[redacted]	[redacted]	632.4	[redacted]	[redacted]	7,129	[redacted]	[redacted]	$ 88.71
2022/23	[redacted]	[redacted]	910.9	[redacted]	[redacted]	12,933	[redacted]	[redacted]	$ 70.43

	Scenario 1: Keeyask Sales @ Generation - All Non-Firm					
Fiscal	Keeyask Firm Energy Export [GWh]	Keeyask Non-Firm Energy Export [GWh]	Keeyask Total Energy [GWh]	Keeyask Firm Revenue Export [CDN $M]	Keeyask Non-Firm Revenue Export [CDN $M]	Keeyask Total Revenue [CDN $M]
2021/22		[redacted]	2,337		[redacted]	[redacted]
2022/23		[redacted]	4,493		[redacted]	[redacted]

	Scenario 2: Keeyask Sales @ Generation - MP250 + ProRated contracts					
Fiscal	Keeyask Firm Energy Export [GWh]	Keeyask Non-Firm Energy Export [GWh]	Keeyask Total Energy [GWh]	Keeyask Firm Revenue Export [CDN $M]	Keeyask Non-Firm Revenue Export [CDN $M]	Keeyask Total Revenue [CDN $M]
2021/22		[redacted]	2,337		[redacted]	216.4
2022/23		[redacted]	4,493		[redacted]	303.1

	Scenario 3: Keeyask Sales @ Generation - All Firm					
Fiscal	Keeyask Firm Energy Export [GWh]	Keeyask Non-Firm Energy Export [GWh]	Keeyask Total Energy [GWh]	Keeyask Firm Revenue Export [CDN $M]	Keeyask Non-Firm Revenue Export [CDN $M]	Keeyask Total Revenue [CDN $M]
2021/22		[redacted]	2,337		[redacted]	254.7
2022/23		[redacted]	4,493		[redacted]	345.5

PUB MFR 12
Financial Results and Forecasts

Details of the impacts of COVID-19 pandemic on O&A expenditures in 2020/21 and 2021/22 to date.

With the onset of the COVID-19 pandemic in Manitoba, Manitoba Hydro incurred incremental operating and administrative (“O&A”) costs totaling $6.1 million in 2020/21 and $1.4 million from April 1 through September 30, 2021 related to: mobilization of a backup control centre; additional cleaning measures required for corporate facilities; the purchase of personal protective equipment for staff; as well as the costs to implement social distancing protocols in motor vehicles.

Manitoba Hydro also realized significant cost savings primarily as a result of the Province of Manitoba’s requirement that Manitoba Hydro, along with all its reporting entities, stop all non-essential and discretionary spending and contribute towards a financial and workforce reduction. Manitoba Hydro undertook an extensive financial review, assessing all forms of spending from the ground up, engaging all vice presidents, directors and managers in the review. Through that review, Manitoba Hydro identified both operating and capital costs that were considered non-essential or discretionary during the pandemic and committed cost savings to the government in the amount of $86.2 million, of which $26.2 million was related to O&A and the remainder was primarily related to Other Capitalized Expenditures including Efficiency Manitoba programs as well as Business Operations Capital.

The cost savings initiative contained two components impacting O&A: (1) workforce reductions; and (2) non-salary operating reductions.

Workforce reduction measures included a freeze on external hiring and stringent vacancy management, the suspension of the summer student program, as well as a requirement for almost all employees to take three days of unpaid leave.

Non-salary operating reductions included the elimination of spending that could be deemed as non-essential or discretionary during the pandemic such as reduced fleet renewal, reductions in advertising, sponsorships, donations, consulting, contracted services, training and staff development and travel.

In 2020/21, the O&A cost savings was approximately $54 million which exceeded the O&A committed savings amount by approximately $28 million; workforce reductions reduced O&A expenses by approximately $19 million (net of capitalization) and non-salary operating reductions totaled approximately $35 million.

Please also see the response to COALITION MFR 22, which discusses why the cost savings achieved through the government savings initiative are not sustainable.

PUB MFR 13

Finance Expense and Debt

Current Economic and Financial Indicators (including interest rates) Forecast. [2019/20 GRA Additional Information Attachment 5]

Manitoba Hydro’s forecast of key economic and financial indicators is based on a consensus view of up to eleven of the following independent sources where available: BMO, IHS Markit, Stokes Economics, The Conference Board of Canada, Desjardins, CIBC, Laurentian, National Bank, Royal Bank of Canada, Scotiabank, and TD Bank. These sources include Canada’s primary financial institutions and several other well-known and respected independent sources. Consensus forecasts are compiled for employment, population, housing, Manitoba disposable income, real gross domestic product (“GDP”), the consumer price index (“CPI”), GDP price deflators, interest rates, and exchange rates. The consensus forecasts of interest rates and exchanges rates are updated quarterly whereas the consensus forecast of economic indicators are typically prepared once a year in the spring.

The forecast of key economic indicators is presented in both calendar (Table 1) and fiscal year (Table 2) format. Where applicable, these forecast values were used to develop the short-term electric load projections for the 2021/22 Forecast and 2022/23 Preliminary Plan.

TABLE 1 - ECONOMIC INDICATORS - CALENDAR YEAR

SPRING 2020

	MANITOBA					CANADA			US
Year	Real GDP % chge	CPI % chge	Real Disposable Income % chge	Population '000s	Residential Customers '000s	Real GDP % chge	CPI % chge	GDP Price Deflator % chge	GDP Price Deflator % chge
2015	1.2	1.2	4.245	1 292	475	0.7	1.1	(0.9)	1.0
2016	1.4	1.3	(0.291)	1 314	482	1.0	1.4	0.8	1.0
2017	3.1	1.6	3.825	1 335	488	3.0	1.6	2.5	1.9
2018	1.3	2.5	(0.233)	1 353	494	2.4	2.3	1.8	2.4
2019	1.1	2.2	1.275	1 369	500	1.9	1.9	1.7	1.8
Forecast									
2020	(5.2)	1.2	(0.8)	1 383	505	(5.9)	0.9	(0.7)	1.3
2021	4.6	2.0	2.2	1 397	510	5.3	1.8	2.2	1.6
2022	2.9	1.8	2.2	1 412	515	2.2	2.1	2.3	1.8
2023	1.8	1.6	2.0	1 428	521	1.9	1.9	2.5	2.0

TABLE 2 - ECONOMIC INDICATORS - FISCAL YEAR

SPRING 2020

	MANITOBA					CANADA			US
Year	Real GDP % chge	CPI % chge	Real Disposable Income % chge	Population '000s	Residential Customers '000s	Real GDP % chge	CPI % chge	GDP Price Deflator % chge	GDP Price Deflator % chge
2015/16	1.3	1.3	3.0	1 298	477	0.3	1.2	(0.6)	0.9
2016/17	1.9	1.4	0.7	1 319	483	1.4	1.5	1.5	1.3
2017/18	2.7	1.7	3.0	1 340	489	3.2	1.6	2.2	2.0
2018/19	1.2	2.2	0.4	1 357	495	1.8	2.2	1.6	2.4
2019/20	(0.5)	2.5	0.3	1 373	502	1.0	2.0	1.5	1.7
Forecast									
2020/21	(2.9)	1.4	(0.0)	1 386	506	(3.1)	1.1	0.0	1.4
2021/22	4.2	1.9	2.2	1 401	511	4.5	1.9	2.3	1.6
2022/23	2.6	1.8	2.1	1 416	517	2.1	2.0	2.3	1.8

The forecast of interest rates and exchange rates from the summer of 2021 are also presented in both calendar (Table 3) and fiscal year (Table 4) format and reflect the consensus benchmark rates as at the end of June 2021. These values were used to derive Manitoba Hydro's borrowing costs for the 2021/22 Forecast and 2022/23 Preliminary Plan.

The values shown in Table 3 represent a 4-quarter average for the calendar year.

TABLE 3 - CANADA/US FINANCIAL INDICATORS - CALENDAR YEAR

SUMMER 2021

	CANADA					UNITED STATES			
Year	Cdn 90 Day T-Bill Rate %	Cdn LT Bond 5 Yr Rate %	Cdn LT Bond 10 Yr Rate %	Cdn LT Bond 30 Yr Rate %	Cdn LT Bond 10 Yr+ Rate %	US 90 Day T-Bill Rate %	US LT Bond 5 Yr Rate %	US LT Bond 10 Yr Rate %	Cdn$/US$
2015	0.52	0.83	1.49	2.17	1.83	0.05	1.53	2.14	1.28
2016	0.50	0.75	1.26	1.92	1.59	0.32	1.34	1.84	1.33
2017	0.70	1.39	1.79	2.28	2.03	0.93	1.91	2.33	1.30
2018	1.40	2.14	2.26	2.33	2.30	1.94	2.75	2.91	1.30
2019	1.66	1.51	1.55	1.77	1.66	2.06	1.96	2.14	1.33
2020	0.43	0.57	0.72	1.19	0.96	0.37	0.54	0.89	1.34
Forecast									
2021	0.12	0.94	1.47	1.99	1.74	0.06	0.87	1.60	1.23
2022	0.29	1.40	1.88	2.30	2.10	0.19	1.39	2.03	1.23
2023	0.88	1.77	2.14	2.54	2.34	0.63	1.63	2.39	1.23

The values shown in Table 4 represent a 4-quarter average for the fiscal year.

TABLE 4 - CANADA/US FINANCIAL INDICATORS - FISCAL YEAR

SUMMER 2021

	CANADA					UNITED STATES			
Year	Cdn 90 Day T-Bill Rate %	Cdn LT Bond 5 Yr Rate %	Cdn LT Bond 10 Yr Rate %	Cdn LT Bond 30 Yr Rate %	Cdn LT Bond 10 Yr+ Rate %	US 90 Day T-Bill Rate %	US LT Bond 5 Yr Rate %	US LT Bond 10 Yr Rate %	Cdn$/US$
2015/16	0.49	0.81	1.46	2.18	1.82	0.12	1.51	2.12	1.31
2016/17	0.51	0.87	1.39	2.02	1.70	0.39	1.48	1.97	1.31
2017/18	0.87	1.62	1.91	2.26	2.09	1.17	2.06	2.41	1.28
2018/19	1.53	2.06	2.16	2.27	2.21	2.15	2.73	2.88	1.31
2019/20	1.56	1.36	1.39	1.60	1.49	1.74	1.63	1.83	1.33
2020/21	0.14	0.47	0.75	1.28	1.01	0.10	0.40	0.88	1.32
Forecast									
2021/22	0.15	1.07	1.60	2.10	1.87	0.08	1.03	1.75	1.22
2022/23	0.38	1.50	1.94	2.34	2.15	0.25	1.45	2.10	1.23

Tables 5 through 7 summarize Manitoba Hydro’s forecasted Canadian and US interest rates, respectively, as included in the 2021/22 Forecast and 2022/23 Preliminary Plan on a fiscal year basis. Relevant credit spreads and the Provincial Guarantee Fee (“PGF”) are added to the consensus benchmark rates to arrive at Manitoba Hydro’s forecasted borrowing costs.

The 2021/22 Forecast includes actual debt issues and refinancing to September 30, 2021. All new and refinanced debt in the remaining months of 2021/22 and through 2022/23 are projected to be issued in USD.

TABLE 5 - CDN SHORT-TERM: SUMMER 2021

	CDN SHORT-TERM INTEREST RATE			
	Consensus Benchmark 90 Day Cdn T-Bill Rate %	Manitoba Spread	Provincial Guarantee Fee	MH Interest Rate %*
2021/22	0.15		1.00	1.15
2022/23	0.38		1.00	1.40

*Rounded to the nearest 5 basis points.

TABLE 6 - CDN LONG-TERM: SUMMER 2021

	CDN FLOATING DEBT INTEREST RATE						CDN FIXED DEBT INTEREST RATE			
	Consensus Benchmark 90 Day Cdn T-Bill Rate %	Spread from Cdn T-Bill to Cdn BA Rate	Cdn 90 Day BA Rate %*	Average Margin Level	Provincial Guarantee Fee	MH Interest Rate %	Consensus Benchmark Long-Term 10 Yr+ Rate %	Manitoba Spread	Provincial Guarantee Fee	MH Interest Rate %*
2021/22	0.16	0.32	0.50	0.41	1.00	1.91	1.92	0.78	1.00	3.70
2022/23	0.38	0.37	0.75	0.41	1.00	2.16	2.15	0.89	1.00	4.05

*Rounded to the nearest 5 basis points.

TABLE 7 - US LONG-TERM: SUMMER 2021

	US FLOATING DEBT INTEREST RATE						US FIXED DEBT INTEREST RATE			
	Consensus Benchmark 90 Day US T-Bill Rate %	Spread from US T-Bill to 6-Month LIBOR Rate	6 Month LIBOR Rate %*	Average Margin Level	Provincial Guarantee Fee	MH Interest Rate %	Consensus Benchmark Long-Term 10 Yr Rate %	Manitoba Spread	Provincial Guarantee Fee	MH Interest Rate %*
2021/22	0.10	0.12	0.20	0.22	1.00	1.42	1.80	0.42	1.00	3.20
2022/23	0.25	0.29	0.55	0.22	1.00	1.77	2.10	0.54	1.00	3.65

*Rounded to the nearest 5 basis points.

Tables 8 through 10 depict the sources used to derive the Canadian and US benchmark interest rate forecast for the 2021/22 and 2022/23 period as shown in Tables 4 through 7. When calculating Manitoba Hydro’s fixed and floating long-term debt interest rates for the 2021/22 Forecast, quarters that have occurred on an actual basis are excluded from the fiscal year average.

For forecasters that provided end of period rates, rates are adjusted to a comparable average period basis. For example, end of period rates for Q1 and Q2 are averaged for a Q2 average period forecast.

Copies of the publicly available and private sector forecasts are provided as Attachment 1 to this response.

	TABLE 8: SUMMER 2021 RATES - CANADIAN															
	Cdn 90 Day T-Bill Rate %								Cdn LT 10 Yr+ Rate %							
	2021			2022				2023	2021			2022				2023
	Actuals								Actuals							
Forecaster	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
BMO	0.12	0.10	0.10	0.10	0.10	0.10	0.10		1.72	1.87	1.93	1.95	2.00	2.05	2.08	
IHS Markit	0.12	0.16	0.19	0.22	0.23	0.49	0.51	0.78	1.72	1.78	1.81	1.88	1.93	1.99	2.03	2.08
The Conference Board of Canada	0.12	0.12	0.14	0.15	0.17	0.20	0.24	0.38	1.72	2.07	2.09	2.08	2.10	2.13	2.18	2.26
Desjardins	0.12	0.15	0.15	0.30	0.30	0.30	0.30	1.10	1.72	1.75	1.96	2.13	2.25	2.35	2.45	2.60
CIBC	0.12	0.13	0.13	0.18	0.23	0.25	0.30		1.72	1.77	1.81	1.75	1.86	1.96	2.03	
Laurentian	0.12	0.13	0.10	0.13	0.15	0.20	0.38	0.56	1.72	1.81	2.01	2.04	2.06	2.09	2.11	2.16
National Bank	0.12	0.15	0.15	0.18	0.28	0.45	0.62		1.72	1.71	1.88	2.01	2.12	2.20	2.28	
Royal Bank of Canada	0.12	0.18	0.20	0.23	0.25	0.38	0.65		1.72	1.76	1.93	2.00	2.08	2.11	2.14	
Scotiabank	0.12	0.15	0.15	0.18	0.28	0.48	0.75		1.72	1.73	1.90	1.96	2.00	2.04	2.06	
TD Bank	0.12	0.14	0.14	0.17	0.19	0.28	0.49	0.79	1.72	1.83	2.14	2.29	2.38	2.40	2.40	
	2021/22 Forecast				2022/23 Preliminary Plan				2021/22 Forecast				2022/23 Preliminary Plan			
AVERAGE OF FISCAL YEAR QUARTERS	**0.15**				**0.38**				**1.87**				**2.15**			
2021/22 AVERAGE OF REMAINING 3 QUARTERS*	**0.16**				N/A				**1.92**				N/A			

*When calculating long-term debt interest rates, quarters that have occurred on an actual basis are excluded from the fiscal year average.

	TABLE 9: SUMMER 2021 COMPONENTS OF CDN LT 10 YR+ RATE %															
	Cdn LT 10 Yr Rate %								Cdn LT 30 Yr Rate %							
	2021			2022				2023	2021			2022				2023
	Actuals								Actuals							
Forecaster	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
BMO	1.46	1.58	1.65	1.70	1.75	1.80	1.85		1.98	2.15	2.20	2.20	2.25	2.30	2.30	
IHS Markit	1.46	1.50	1.52	1.59	1.64	1.69	1.73	1.78	1.98	2.07	2.10	2.17	2.23	2.28	2.32	2.37
The Conference Board of Canada	1.46	1.51	1.55	1.60	1.66	1.75	1.88	2.06								
Desjardins	1.46	1.52	1.75	1.93	2.05	2.15	2.25	2.40	1.98	1.97	2.18	2.33	2.45	2.55	2.65	2.80
CIBC	1.46	1.52	1.55	1.55	1.70	1.78	1.83		1.98	2.02	2.08	1.95	2.03	2.15	2.23	
Laurentian	1.46	1.55	1.73	1.78	1.83	1.88	1.90	1.94	1.98	2.07	2.30	2.30	2.30	2.30	2.33	2.37
National Bank	1.46	1.47	1.65	1.83	1.95	2.05	2.15		1.98	1.95	2.10	2.20	2.28	2.35	2.42	
Royal Bank of Canada	1.46	1.52	1.68	1.75	1.85	1.93	1.98		1.98	2.00	2.18	2.25	2.30	2.30	2.30	
Scotiabank	1.46	1.52	1.73	1.83	1.88	1.93	1.98		1.98	1.95	2.08	2.10	2.13	2.15	2.15	
TD Bank	1.46	1.60	1.90	2.08	2.20	2.25	2.25	2.24	1.98	2.07	2.38	2.50	2.55	2.55	2.55	
	2021/22 Forecast				2022/23 Preliminary Plan				2021/22 Forecast				2022/23 Preliminary Plan			
AVERAGE OF FISCAL YEAR QUARTERS	**1.60**				**1.94**				**2.10**				**2.34**			
2021/22 AVERAGE OF REMAINING 3 QUARTERS*	**1.65**				N/A				**2.14**				N/A			

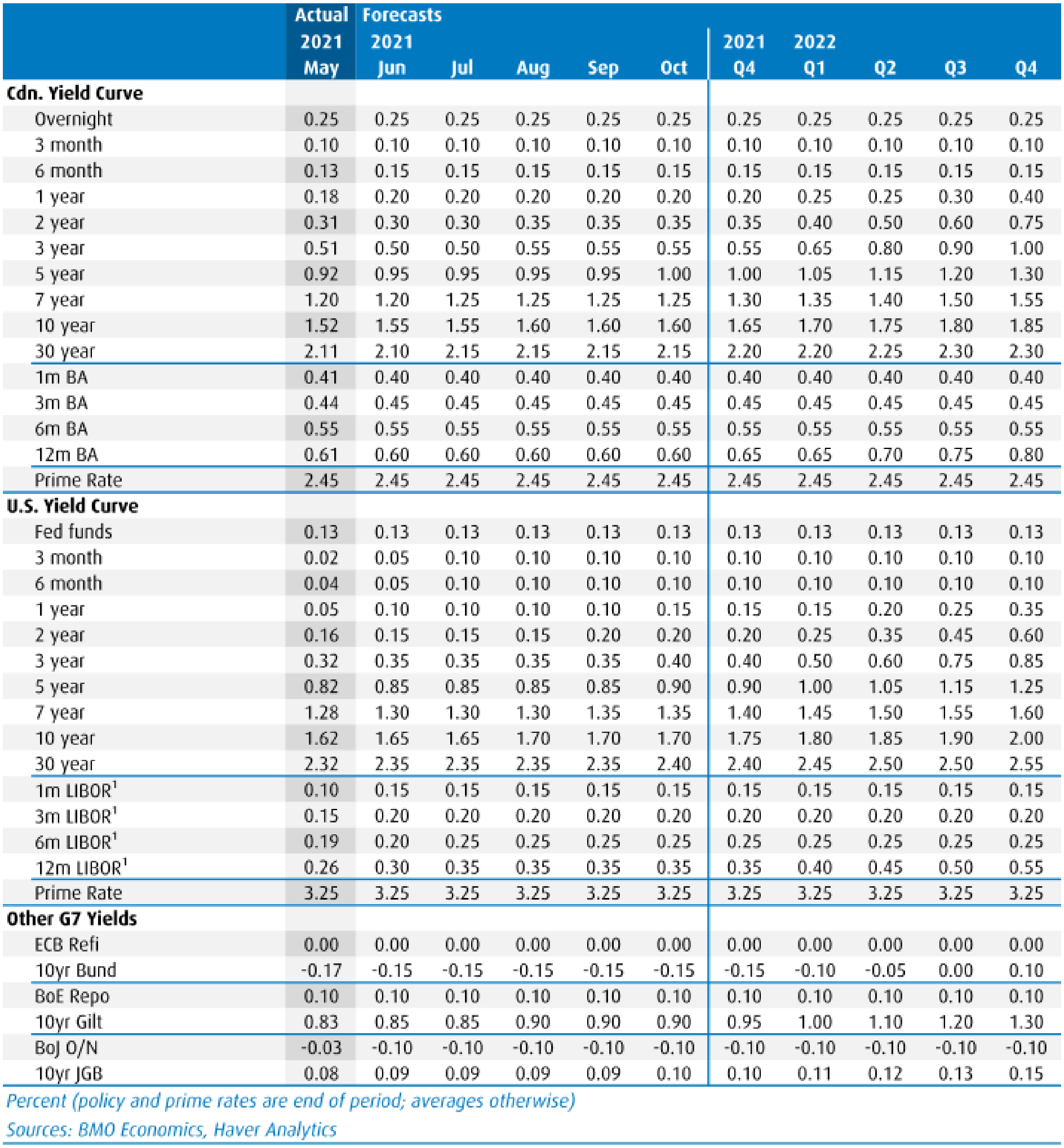
*When calculating long-term debt interest rates, quarters that have occurred on an actual basis are excluded from the fiscal year average.

The Canadian long-term 10 year+ rate is calculated as an average of the Canadian long-term 10-year and 30-year rates where both sources are available.

	TABLE 10: SUMMER 2021 RATES - US															
	US T-Bill Rate %								US LT 10 Yr Rate %							
	2021			2022				2023	2021			2022				2023
	Actuals								Actuals							
Forecaster	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
BMO	0.03	0.10	0.10	0.10	0.10	0.10	0.10		1.59	1.68	1.75	1.80	1.85	1.90	2.00	
IHS Markit	0.03	0.02	0.03	0.04	0.04	0.04	0.05	0.06	1.59	1.66	1.69	1.75	1.81	1.86	1.90	1.95
The Conference Board of Canada	0.03	0.11	0.11	0.11	0.11	0.12	0.22	0.41								
Desjardins	0.03	0.05	0.05	0.20	0.20	0.20	0.20	0.90	1.59	1.63	1.90	2.05	2.15	2.25	2.35	2.65
CIBC	0.03	0.05	0.10	0.18	0.23	0.33	0.45		1.59	1.60	1.63	1.55	1.65	1.75	1.90	
Laurentian									1.59	1.68	1.95	2.05	2.13	2.18	2.23	2.31
National Bank	0.03	0.05	0.05	0.08	0.11	0.13	0.14		1.59	1.55	1.75	1.90	1.99	2.08	2.16	
Royal Bank of Canada	0.03	0.13	0.23	0.33	0.48	0.63	0.73		1.59	1.68	1.95	2.03	2.08	2.13	2.18	
Scotiabank	0.03	0.08	0.10	0.10	0.10	0.10	0.13		1.59	1.63	1.95	2.13	2.18	2.23	2.28	
TD Bank	0.03	0.08	0.10	0.10	0.10	0.18	0.38	0.66	1.59	1.68	1.95	2.05	2.15	2.25	2.35	2.43
	2021/22 Forecast				2022/23 Preliminary Plan				2021/22 Forecast				2022/23 Preliminary Plan			
AVERAGE OF FISCAL YEAR QUARTERS	**0.08**				**0.25**				**1.75**				**2.10**			
2021/22 AVERAGE OF REMAINING 3 QUARTERS*	**0.10**				N/A				**1.80**				N/A			

*When calculating long-term debt interest rates, quarters that have occurred on an actual basis are excluded from the fiscal year average.

June 3, 2021



	Actual	Forecasts									
	2021	2021					2021	2022			
	May	Jun	Jul	Aug	Sep	Oct	Q4	Q1	Q2	Q3	Q4
Cdn. Yield Curve											
Overnight	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
3 month	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
6 month	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1 year	0.18	0.20	0.20	0.20	0.20	0.20	0.20	0.25	0.25	0.30	0.40
2 year	0.31	0.30	0.30	0.35	0.35	0.35	0.35	0.40	0.50	0.60	0.75
3 year	0.51	0.50	0.50	0.55	0.55	0.55	0.55	0.65	0.80	0.90	1.00
5 year	0.92	0.95	0.95	0.95	0.95	1.00	1.00	1.05	1.15	1.20	1.30
7 year	1.20	1.20	1.25	1.25	1.25	1.25	1.30	1.35	1.40	1.50	1.55
10 year	1.52	1.55	1.55	1.60	1.60	1.60	1.65	1.70	1.75	1.80	1.85
30 year	2.11	2.10	2.15	2.15	2.15	2.15	2.20	2.20	2.25	2.30	2.30
1m BA	0.41	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
3m BA	0.44	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
6m BA	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
12m BA	0.61	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.75	0.80
Prime Rate	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
U.S. Yield Curve											
Fed funds	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
3 month	0.02	0.05	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
6 month	0.04	0.05	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
1 year	0.05	0.10	0.10	0.10	0.10	0.15	0.15	0.15	0.20	0.25	0.35
2 year	0.16	0.15	0.15	0.15	0.20	0.20	0.20	0.25	0.35	0.45	0.60
3 year	0.32	0.35	0.35	0.35	0.35	0.40	0.40	0.50	0.60	0.75	0.85
5 year	0.82	0.85	0.85	0.85	0.85	0.90	0.90	1.00	1.05	1.15	1.25
7 year	1.28	1.30	1.30	1.30	1.35	1.35	1.40	1.45	1.50	1.55	1.60
10 year	1.62	1.65	1.65	1.70	1.70	1.70	1.75	1.80	1.85	1.90	2.00
30 year	2.32	2.35	2.35	2.35	2.35	2.40	2.40	2.45	2.50	2.50	2.55
1m LIBOR[1]	0.10	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
3m LIBOR[1]	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
6m LIBOR[1]	0.19	0.20	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
12m LIBOR[1]	0.26	0.30	0.35	0.35	0.35	0.35	0.35	0.40	0.45	0.50	0.55
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Other G7 Yields											
ECB Refi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10yr Bund	-0.17	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.10	-0.05	0.00	0.10
BoE Repo	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
10yr Gilt	0.83	0.85	0.85	0.90	0.90	0.90	0.95	1.00	1.10	1.20	1.30
BoJ O/N	-0.03	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
10yr JGB	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.11	0.12	0.13	0.15

Percent (policy and prime rates are end of period; averages otherwise)

Sources: BMO Economics, Haver Analytics

		Actual	**Forecasts**									
		2021	**2021**					**2021**	**2022**			
		May	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Canadian Dollar												
C$ per US$		1.21	1.21	1.21	1.21	1.21	1.20	1.20	1.20	1.19	1.18	1.18
US$ per C$		0.825	0.826	0.827	0.828	0.830	0.831	0.832	0.836	0.841	0.845	0.850
Trade-weighted		125.2	125.3	125.4	125.5	125.5	125.6	125.7	126.1	126.5	127.0	127.4
U.S. Dollar												
Trade-weighted[1]		111.5	111.3	111.2	111.0	110.8	110.7	110.5	110.1	109.7	109.4	109.0
European Currencies												
Euro[2]		1.21	1.22	1.22	1.22	1.22	1.23	1.23	1.23	1.24	1.24	1.24
Danish Krone		6.12	6.10	6.10	6.10	6.10	6.10	6.05	6.05	6.05	6.00	6.00
Norwegian Krone		8.31	8.30	8.25	8.25	8.20	8.20	8.15	8.10	8.10	8.05	8.05
Swedish Krone		8.35	8.35	8.35	8.35	8.30	8.30	8.30	8.30	8.25	8.25	8.20
Swiss Franc		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.89	0.88	0.87
U.K. Pound[2]		1.41	1.41	1.42	1.42	1.43	1.43	1.44	1.44	1.44	1.43	1.43
Asian Currencies												
Chinese Yuan		6.43	6.43	6.44	6.44	6.44	6.44	6.45	6.44	6.43	6.42	6.40
Japanese Yen		109	109	109	108	108	108	107	107	106	106	105
Korean Won		1,124	1,120	1,115	1,110	1,110	1,105	1,100	1,090	1,080	1,070	1,060
Indian Rupee		73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.1	73.0	72.8	72.7
Singapore Dollar		1.33	1.32	1.32	1.31	1.31	1.30	1.30	1.29	1.29	1.28	1.28
Taiwan Dollar		27.9	27.9	27.9	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Other Currencies												
Australian Dollar[2]		0.776	0.777	0.777	0.778	0.778	0.779	0.779	0.783	0.788	0.793	0.798
New Zealand Dollar[2]		0.722	0.723	0.723	0.724	0.724	0.724	0.725	0.728	0.731	0.735	0.739
Mexican Peso		19.96	19.90	19.85	19.80	19.75	19.70	19.65	19.50	19.35	19.20	19.05
Brazilian Real		5.29	5.30	5.30	5.25	5.25	5.25	5.25	5.25	5.25	5.30	5.30
Russian Ruble		74.0	73.7	73.5	73.3	73.1	72.8	72.6	72.3	72.3	72.3	72.3
South African Rand		14.0	14.0	13.9	13.8	13.7	13.7	13.6	13.6	13.7	13.8	14.0
Cross Rates												
Versus Canadian Dollar												
Euro	(C$/€)	1.47	1.47	1.47	1.47	1.47	1.48	1.48	1.47	1.47	1.47	1.46
U.K. Pound	(C$/£)	1.71	1.71	1.71	1.72	1.72	1.72	1.73	1.72	1.71	1.70	1.68
Japanese Yen	(¥/C$)	90	90	90	90	90	89	89	89	89	89	89
Australian Dollar	(C$/A$)	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Versus Euro												
U.K. Pound	(£/€)	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.87	0.87
Japanese Yen	(¥/€)	133	132	132	132	132	132	132	131	131	131	131

Local currency per U.S. Dollar (averages); [1] Federal Reserve Broad Index; [2] (US$ per local currency)

Sources: BMO Economics, Haver Analytics

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Quarterly Tables
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Table 24, Interest Rates

(Percent)

	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	25Q1	25Q2	25Q3	25Q4	26Q1	26Q2	26Q3	26Q4	27Q1	27Q2	27Q3	27Q4	28Q1
Government of Canada																											
Treasury Bills																											
3 Months	0.16	0.19	0.22	0.23	0.49	0.51	0.78	0.79	1.05	1.05	1.29	1.29	1.54	1.54	1.79	1.79	2.05	2.05	2.30	2.30	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Bonds																											
5 Years	0.92	0.95	1.00	1.03	1.17	1.20	1.35	1.36	1.48	1.50	1.64	1.68	1.83	1.87	2.02	2.06	2.21	2.24	2.38	2.42	2.55	2.58	2.61	2.63	2.65	2.67	2.69
10 Years	1.50	1.52	1.59	1.64	1.69	1.73	1.78	1.80	1.81	1.85	1.90	1.97	2.05	2.12	2.19	2.26	2.33	2.39	2.45	2.50	2.56	2.60	2.65	2.69	2.73	2.76	2.79
30 Years	2.07	2.10	2.17	2.23	2.28	2.32	2.37	2.39	2.40	2.44	2.49	2.56	2.64	2.71	2.78	2.85	2.92	2.98	3.04	3.09	3.15	3.19	3.24	3.28	3.32	3.35	3.38

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Table 25, Financial Aggregates and US Interest Rates

	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	25Q1	25Q2	25Q3	25Q4	26Q1	26Q2	26Q3	26Q4	27Q1	27Q2	27Q3	27Q4	28Q1
US Interest Rates (Percent)																											
3-Month T-Bills	0.02	0.03	0.04	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.15	0.32	0.33	0.33	0.38	0.55	0.61	0.77	0.83	1.00	1.06	1.22	1.28	1.45	1.51	1.67
5-year Treasury Notes	0.85	0.89	0.94	0.98	1.03	1.07	1.12	1.16	1.18	1.23	1.30	1.39	1.47	1.56	1.66	1.77	1.86	1.96	2.05	2.15	2.23	2.32	2.40	2.49	2.57	2.65	2.72
10-Year Treasury Notes	1.66	1.69	1.75	1.81	1.86	1.90	1.95	1.97	1.98	2.01	2.06	2.13	2.21	2.28	2.35	2.42	2.49	2.55	2.61	2.67	2.72	2.77	2.81	2.85	2.89	2.93	2.96

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Table 26, Exchange Rates and Determinants

	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	25Q1	25Q2	25Q3	25Q4	26Q1	26Q2	26Q3	26Q4	27Q1	27Q2	27Q3	27Q4	28Q1
Canada-US Exchange Rate																											
C$/US$	1.202	1.233	1.238	1.234	1.200	1.216	1.203	1.214	1.205	1.207	1.193	1.202	1.219	1.216	1.219	1.223	1.220	1.232	1.240	1.237	1.235	1.253	1.250	1.246	1.240	1.241	1.246

The Conference Board of Canada
16-Jun-21

Description:	Exchange Rate (U.S./Canada)	Canada - 3 Month Treasury Bill ()	Canada, Federal Bonds: 5 Years ()	United States - 3 Month Treasury Bill ()	Canada, Federal Bonds: 10 Years ()	Canada, Federal Bonds: Long-Term ()
Mnemonic:	PFX	RTB90	RGOC5	USRTB90	RGOC10	RGOCL
2021.03	1.21	0.12	0.93	0.11	1.51	2.07
2021.04	1.21	0.14	0.94	0.11	1.55	2.09
2022.01	1.22	0.15	0.98	0.11	1.60	2.08
2022.02	1.22	0.17	1.20	0.11	1.66	2.10
2022.03	1.23	0.20	1.27	0.12	1.75	2.13
2022.04	1.23	0.24	1.37	0.22	1.88	2.18
2023.01	1.24	0.38	1.58	0.41	2.06	2.26
2023.02	1.24	0.46	1.65	0.51	2.16	2.35
2023.03	1.24	0.50	1.72	0.53	2.26	2.45
2023.04	1.24	0.67	1.79	0.68	2.34	2.54
2024.01	1.24	0.88	1.90	0.91	2.49	2.69
2024.02	1.25	1.00	1.97	1.03	2.53	2.72
2024.03	1.25	1.13	2.01	1.16	2.55	2.75
2024.04	1.25	1.25	2.06	1.28	2.57	2.77
2025.01	1.24	1.38	2.13	1.43	2.61	2.80
2025.02	1.25	1.50	2.17	1.68	2.63	2.83
2025.03	1.25	1.63	2.21	1.91	2.65	2.84
2025.04	1.25	1.71	2.23	2.01	2.66	2.85

Desjardins
ECONOMIC STUDIES | JUNE 22, 2021

ECONOMIC & FINANCIAL OUTLOOK

Things Are Getting Better… but Inflationary Pressures Are Intensifying

HIGHLIGHTS

- The pandemic's progress continues to have a major impact on the world's economy. The regions that were hardest hit by the second and third waves of COVID-19 have experienced more difficulty up to now than the other countries, as can be seen from their real GDP. The relative success of the vaccination campaigns is also a cause for divergence between developed and emerging countries.
- U.S. real GDP should improve strongly in the second quarter of 2021, due to the federal assistance payments in March and the easing of health measures. An annualized gain of over 10% is expected, and real GDP should exceed both its pre-pandemic level and potential GDP, thereby fuelling inflationary pressures.
- The third wave of COVID-19 had significant effects on the Canadian economy in the second quarter. That said, the growth outlook for the Canadian economy remains very good. The sharp drop in COVID-19 cases and the successful vaccination campaign are prompting the provinces to start lifting their health restrictions. In these circumstances, Canada's real GDP should bounce back in the third quarter and maintain relatively strong growth.
- The Federal Reserve took a much more optimistic view at its June meeting, even signaling that the robust outlook for inflation and the labour market might warrant a more rapid normalization of its monetary policy. Higher inflation and the gradual reduction of bond purchases by central banks, notably in Canada where a further reduction could be announced in July, suggest an uptrend for bond yields, even though the first key rate hikes are not expected until late in 2022.
- Despite the new health restrictions imposed last winter and spring, Quebec's economy has stood up better than expected. Real GDP continued to grow, almost reaching the level of February 2020. The 2021 forecasts are therefore more favourable than before.
- The restrictive measures introduced to counter the third wave of COVID-19 have varied widely from one province to another. But all of the provinces should see their real GDP rebound significantly this year after the hard times of 2020. Alberta could have the greatest rise this year, due largely to the energy sector's comeback. Ontario's real GDP could grow more slowly than the national average in 2021, due to the harsher impact of the third wave.

CONTENTS

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NOTE TO READERS: The letters k, M and B are used in texts and tables to refer to thousands, millions and billions respectively.

RISKS INHERENT TO OUR SCENARIOS

Despite the good news about vaccination and the easing of health measures in several regions, the pandemic is not over yet, and the way it progresses is the main risk factor that could affect our economic scenarios. Another wave of COVID-19 could adversely impact the economy, forcing the extension or reintroduction of restrictive public health measures. It would also affect financial markets by sapping profit outlooks and investor optimism. The slowness of the vaccination campaigns in some countries could allow new variants to develop, some of which could be more resistant to the vaccines now being distributed. On the other hand, strong vaccination campaign performance in developed countries and quickly reaching a degree of herd immunity could lead to faster economic growth than expected, which would continue to be supported by the current fiscal and monetary policies. The excess savings stockpiled during the pandemic could be spent rapidly, leading to robust demand and sustained consumer price growth. In the United States, the passing and implementation of President Joe Biden's ambitious infrastructure and family assistance plans could lead to stronger economic growth in the medium term. In Canada, and in Quebec, the residential real estate market's buoyancy is raising the risk of some markets becoming significantly overvalued and increasingly vulnerable to a price correction. The improved economic outlook and rapid rise in commodity prices are making things harder for the central banks. Maintaining overly stimulating monetary policies or other highly aggressive budgetary measures could lead to a much bigger surge in inflation expectations and bond yields. On the other hand, tightening monetary policies too abruptly could also trigger a negative reaction from investors. Lastly, the many supply-and-demand imbalances could lead to much higher inflation than forecast in several countries around the world.

TABLE 1

World GDP growth (adjusted for PPP) and inflation rate

	WEIGHT*	REAL GDP GROWTH			INFLATION RATE		
IN %		2020	2021f	2022f	2020	2021f	2022f
Advanced economies	**39.8**	**-4.9**	**5.3**	**4.0**	**0.7**	**2.7**	**2.0**
United States	15.8	-3.5	6.8	4.0	1.2	3.8	2.6
Canada	1.4	-5.3	6.3	4.1	0.7	2.6	2.0
Quebec	*0.3*	*-5.3*	*7.2*	*3.5*	*0.8*	*2.8*	*2.0*
Ontario	*0.5*	*-5.8*	*5.5*	*4.5*	*0.7*	*2.6*	*2.1*
Japan	4.0	-4.7	2.8	3.0	0.0	0.6	0.8
United Kingdom	2.4	-9.8	6.5	4.9	0.9	2.2	2.5
Euro zone	12.4	-6.7	4.5	4.3	0.3	2.3	1.6
Germany	*3.4*	*-5.1*	*3.3*	*4.6*	*0.5*	*2.8*	*1.9*
France	*2.4*	*-8.0*	*5.3*	*3.5*	*0.5*	*1.9*	*1.4*
Italy	*2.0*	*-8.9*	*4.6*	*4.2*	*-0.1*	*1.8*	*1.3*
Other countries	4.2	-1.6	2.4	1.9	0.4	1.4	1.0
Australia	*1.0*	*-2.4*	*4.4*	*3.1*	*0.9*	*2.6*	*2.1*
Emerging and developing economies	**60.2**	**-2.7**	**6.4**	**5.0**	**3.0**	**3.7**	**3.6**
North Asia	25.5	-0.4	8.4	5.9	3.6	3.3	3.3
China	*17.3*	*2.3*	*8.6*	*5.6*	*2.5*	*2.1*	*2.5*
India	*7.1*	*-7.3*	*8.8*	*6.8*	*6.6*	*5.6*	*5.1*
South Asia	5.3	-4.6	4.7	5.6	0.9	2.8	2.7
Latin America	5.9	-6.4	4.9	3.0	3.1	4.5	3.7
Mexico	*1.9*	*-8.3*	*5.3*	*3.0*	*3.4*	*4.5*	*3.7*
Brazil	*2.4*	*-4.4*	*3.6*	*2.4*	*3.6*	*5.3*	*4.1*
Eastern Europe	8.0	-2.1	3.9	3.7	5.3	7.3	5.7
Russia	*3.2*	*-3.0*	*3.1*	*2.7*	*3.4*	*5.1*	*4.4*
Other countries	15.4	-5.1	6.0	4.7	4.2	5.1	5.7
South Africa	*0.6*	*-7.1*	*4.0*	*2.7*	*3.2*	*4.6*	*4.6*
World	**100.0**	**-3.6**	**6.0**	**4.6**	**2.1**	**3.3**	**3.0**

f: forecasts; PPP : Purchasing Power Parities, exchange rate that equates the costs of a broad basket of goods and services across countries; * 2019.
Sources: World Bank, Consensus Forecasts and Desjardins, Economic Studies

FINANCIAL FORECASTS

The past weeks have seen encouraging developments regarding the health crisis as well as further increases in inflation. Despite this, bond yields had generally continued to decline, as investors seemed to have accepted the argument that surging inflation was largely a reflection of temporary factors. The Federal Reserve (Fed) took a much more optimistic view at its June meeting, however, even signaling that the robust outlook for inflation and the labour market might warrant a more rapid normalization of its monetary policy. Discussions about a possible reduction to its bond purchases have begun and a formal announcement in this sense seems likely as early as the September meeting. The Fed's change in tone sent bond yields and the U.S. dollar up and stock markets down. After last year's spectacular gains, particularly south of the border, it would not be surprising to see some consolidations among the main stock market indexes. However, the risk of a major and lasting correction seems limited and the medium-term stock market outlooks remains relatively favourable. Commodity prices should also remain high, which will help the loonie stay above US$0.80 even versus a stronger greenback. Higher inflation and the gradual reduction of bond purchases by central banks, notably in Canada where a further reduction could be announced in July, suggest an uptrend for bond yields, even though the first key rate hikes are not expected until late in 2022.

TABLE 2

Summary of the financial forecasts

	2020		2021				2022			
END OF PERIOD IN % (EXCEPT IF INDICATED)	Q3	Q4	Q1	Q2f	Q3f	Q4f	Q1f	Q2f	Q3f	Q4f
Key interest rate										
United States	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50
Canada	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50
Euro zone	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
United Kingdom	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.25
Federal bonds										
United States										
2-year	0.13	0.13	0.16	0.25	0.35	0.50	0.65	0.75	0.90	1.15
5-year	0.27	0.35	0.92	0.90	1.05	1.15	1.25	1.35	1.50	1.70
10-year	0.68	0.91	1.75	1.55	1.80	2.00	2.10	2.20	2.30	2.40
30-year	1.45	1.64	2.42	2.10	2.35	2.55	2.70	2.80	2.90	3.00
Canada										
2-year	0.25	0.20	0.22	0.45	0.55	0.65	0.80	0.90	1.05	1.30
5-year	0.36	0.39	0.99	0.95	1.10	1.25	1.40	1.50	1.65	1.85
10-year	0.57	0.67	1.55	1.45	1.65	1.85	2.00	2.10	2.20	2.30
30-year	1.11	1.21	1.97	1.90	2.10	2.25	2.40	2.50	2.60	2.70
Currency market										
Canadian dollar (USD/CAD)	1.33	1.27	1.26	1.23	1.23	1.22	1.22	1.22	1.21	1.20
Canadian dollar (CAD/USD)	0.75	0.79	0.80	0.81	0.81	0.82	0.82	0.82	0.83	0.83
Euro (EUR/USD)	1.17	1.22	1.18	1.19	1.20	1.20	1.21	1.20	1.19	1.18
British pound (GBP/USD)	1.29	1.37	1.38	1.39	1.40	1.40	1.41	1.41	1.42	1.42
Yen (USD/JPY)	105	103	111	110	110	110	111	111	111	112
Stock markets (level and growth)*										
United States – S&P 500	3,756		Target: 4,250 (+13.2%)				Target: 4,600 (+8.2%)			
Canada – S&P/TSX	17,433		Target: 20,500 (+17.6%)				Target: 22,000 (+7.3%)			
Commodities (annual average)										
WTI oil (US$/barrel)	39 (48*)		64 (65*)				66 (67*)			
Gold (US$/ounce)	1,771 (1,898*)		1,785 (1,730*)				1,665 (1,610*)			

f: forecasts; WTI: West Texas Intermediate; * End of year.
Sources: Datastream and Desjardins, Economic Studies

Overseas

Vaccination, Variants and the Reopening Pace Lead to an Uneven Recovery

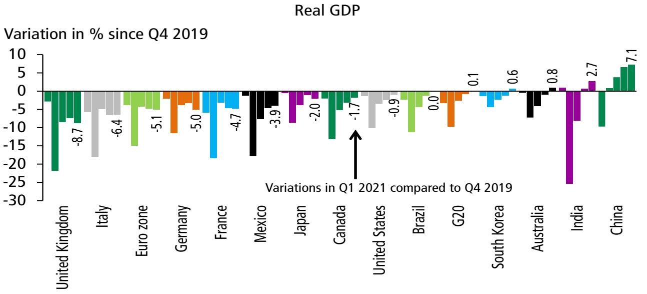
FORECASTS

The pandemic's progress continues to have a major impact on the world's economy. The regions that were hardest hit by the second and third waves of COVID-19 have experienced more difficulty up to now than the other countries, as can be seen from their real GDP. The relative success of the vaccination campaigns is also a cause for divergence between developed and emerging countries. Overall, worldwide real GDP should grow 6.0% in 2021 after contracting an estimated -3.6% in 2020, and it should grow 4.6% in 2022. For the moment, inflationary pressures are mainly being felt in North America, but consumer prices could also increase more rapidly in the other regions as the recovery continues.

The second wave of COVID-19 had major economic consequences for several countries. The hardest hit had to significantly ramp up health measures, which had a noticeable impact on economic activity at the beginning of 2021. Real GDP contracted in seven of the G20 countries in the first quarter, the worst off being the United Kingdom, Germany and Japan (graph 1). The third wave of COVID-19 also affected some regions. one of them being India, which had to shut down large segments of its economy. The more the pandemic progresses, the more uneven the world's economic recovery becomes. Some countries like the United States are close to their pre-crisis economic activity levels while others, like China, have largely surpassed them already. Nevertheless, several economies are still far from that threshold, especially in Europe (graph 2).

The relative success of vaccination campaigns is also a factor that differentiates economic growth. North America and Western Europe are particularly well advanced and have managed to limit the human and economic consequences of the third wave. That is not the case in Asia, where the vaccination rollouts are slower, even in advanced countries like Japan and Australia. On average, the emerging countries are even farther behind, which could delay their economic recovery and allow new and potentially dangerous variants to appear in the coming quarters.

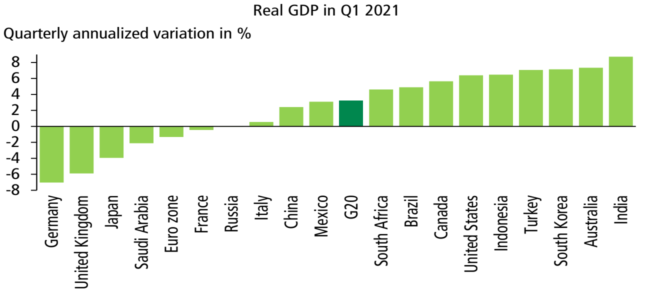
GRAPH 2
Most of the large economies are still far below their pre-pandemic levels



Sources: Organisation for Economic Co-operation and Development and Desjardins, Economic Studies

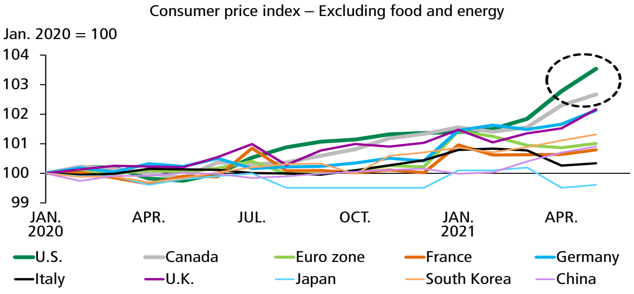
The different pace of economic recovery is reflected in inflationary pressures. While the United States and Canada are up against a notable acceleration of consumer prices, those increases are still moderate in the euro zone and in most of the other large economies (graph 3). Several common factors have

GRAPH 1
The pandemic continued to affect several countries negatively at the beginning of 2021



Sources: Organisation for Economic Co-operation and Development and Desjardins, Economic Studies

GRAPH 3
The recent acceleration of inflation is mainly to be seen in North America



Sources: Datastream and Desjardins, Economic Studies

been noted, however, like the base effects that fuel the annual variations of price indexes, higher commodity prices, supply problems and the increase in international transportation costs. It appears that the slower recovery in some countries is holding down the pressures on consumer prices, which means that when economic conditions improve, especially in regions with significant delays, more inflation will be generated sooner or later

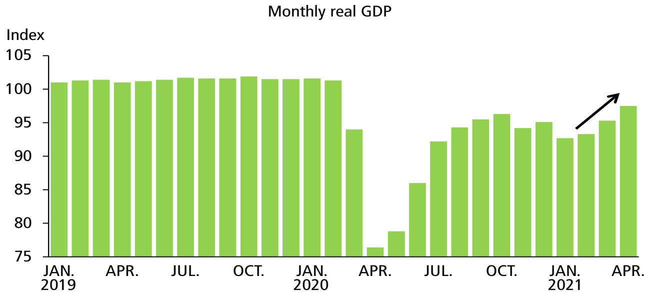
EURO ZONE

Europe's real GDP contracted 1.3% annualized (-0.3% non-annualized) between the fourth quarter of 2020 and the first quarter of 2021. That is the second quarterly drop in a row. The euro zone has had only one positive quarter since the end of 2019, that one being the third quarter of 2020. Reopening has progressed in most of the euro zone countries, but very gradually, and the restrictive measures have continued to curb economic activity throughout much of the second quarter. We nevertheless expect a return to growth in the second quarter of 2021, especially in Germany whose annualized real GDP fell 7.0% (-1.8% non-annualized). Europe's growth should be even stronger this summer. After dropping 6.7% in 2020, the euro zone's real GDP should increase by 4.5% in 2021 and 4.3% in 2022.

UNITED KINGDOM

The lockdown imposed by the U.K. government in response to the serious second wave of COVID-19 at the very beginning of the year affected economic activity heavily. The U.K.'s real GDP shrank 5.9% annualized in the first quarter (-1.5% non-annualized). Thanks to a relatively rapid vaccination rollout, a very gradual reopening schedule started in March and continued through the spring, which meant that large segments of the economy could begin functioning again. Monthly real GDP has started to bounce back (graph 4) and we expect real GDP in the United Kingdom to grow strongly in the second quarter of 2021. However, the recent increase in COVID-19 cases due to the Delta variant is delaying the last phase of the government's reopening plan by at least four weeks. Nevertheless, if the situation can be contained, the effect on the quarterly variations of real GDP should not be too bad. After falling 9.8% in 2020, we expect real GDP to rise by 6.5% in 2021 and 4.9% in 2022.

GRAPH 4
The U.K.'s real GDP is speeding up again



Sources: Office for National Statistics and Desjardins, Economic Studies

JAPAN

Although the pandemic waves were less pronounced in Japan than in most of the other advanced economies, the government decreed a state of emergency in January, which has limited economic activity, especially services. Japan's economy contracted 4.0% annualized in the first quarter (-1.0% non-annualized) and, since the health measures are only now being lifted in some regions, the economy was still restrained in the spring. The external sector seems to have benefited from the global recovery, however, which partly offsets the weaknesses of domestic demand. Japan's real GDP fell 4.7% in 2020 but should grow by 2.8% in 2021 and 3.0% in 2022.

EMERGING COUNTRIES

China's economy slowed down in the first quarter of 2021 with a non-annualized growth of real GDP that slid from 3.2% at the end of 2020 to only 0.6% last winter. We expect China's real GDP to make better progress in the coming quarters, but we get the impression that the momentum has moderated. Nevertheless, we expect China's real GDP to increase 8.6% in 2021. In India, the problems caused by the COVID-19 wave that ravaged the country starting in March have led to a downward revision of the scenarios.

United States

The Economic Recovery Brings Inflationary Pressures with It

FORECASTS

U.S. real GDP should improve strongly in the second quarter of 2021, due to the federal assistance payments in March and the easing of health measures. An annualized gain of over 10% is expected, and real GDP should exceed both its pre-pandemic level and potential GDP, thereby fuelling inflationary pressures. After that, economic activity will still be robust, but growth rates will be more moderate. After declining 3.5% in 2020, U.S. real GDP should grow 6.8% in 2021 and 4.0% in 2022.

According to the second estimate of national accounts, U.S. real GDP rose 6.4% annualized (+1.6% non-annualized) between the fourth quarter of 2020 and the first quarter of 2021. That growth is mainly due to an 11.3% quarterly rebound in real consumption, including strong gains in durable goods. Federal assistance in December 2020 supported that rebound with individual payments of US$900 and enhancements to unemployment insurance.

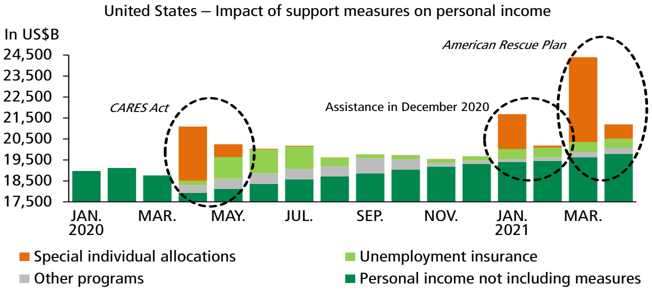
The most recent version of federal assistance, the US$1,900B *American Rescue Plan*, also affected the first quarter figures because the US$1,400 individual payments it provided were largely distributed just before the end of March. That pushed real disposable income up 22.7% in March, but it fell back down in April (graph 5). Real consumer spending rose 4.1% in March and stayed high in April, boosting growth for the second quarter.

March's good economic news was also reflected on the job market, with 785,000 new jobs for that month alone. The one drawback was that this performance, coupled with the easing of health measures, raised expectations about future job creation which were not met in April and May. Job creation was not as strong as hoped, and there are still 7,629,000 fewer workers than at the February 2020 peak. This shortfall can be seen right across the private sector industries (graph 6). An overall reluctance to go back to work seems to be a constraint right now, even though job offers are abundant. That has prompted some States to eliminate the unemployment insurance enhancements. The job market is expected to pick up as the U.S. economy opens up again, especially when schools and city centers go back to normal. That said, while real GDP should be back on track very soon, employment may lag until the fall of 2022.

The disappointment of fewer than expected jobs in April and May could be coupled with the slowed down vaccination campaign in the United States. The number of Americans who want to be vaccinated seems to have peaked at a rather low level, as can be seen from the lower number of daily doses administered. That could affect growth in the fall or winter if new waves of the pandemic emerge.

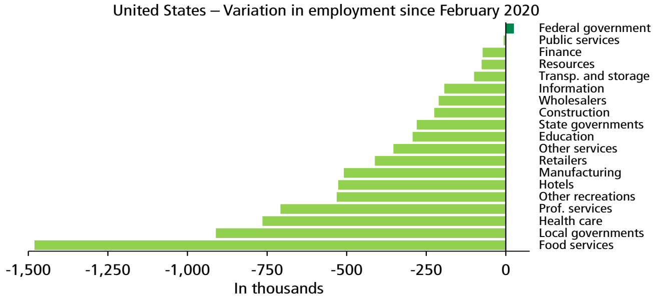
The mismatch between supply and demand on the job market can also be seen in other sectors of the U.S. economy. Many industries are now facing both labour shortages and a lack of parts and commodities, plus transportation difficulties. This also affects industrial output, which is recovering far slower than consumption. We are also seeing an impact on business

GRAPH 5
Federal government assistance gave a boost to household income in the United States



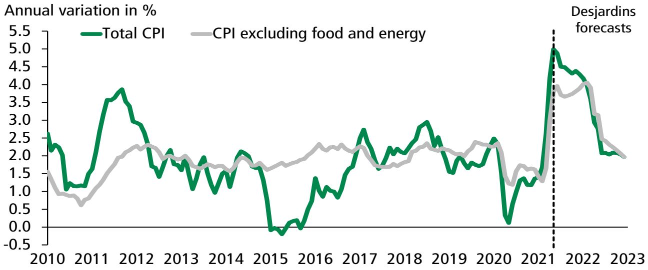
Sources: Bureau of Economic Analysis and Desjardins, Economic Studies

GRAPH 6
Most U.S. industries are still very short of labour compared to pre-pandemic times



Sources: Bureau of Labor Statistics and Desjardins, Economic Studies inventories, which declined sharply in the first quarter (knocking 2.8 percentage points off the annualized growth of real GDP) and are still low in the second quarter. Costs are rising, as are businesses and consumers inflation expectations. All this is becoming more and more apparent in the consumer price index (CPI), which reached an annual variation of 5.0% in May. Total inflation and inflation excluding food and energy should remain high in the coming months. Total CPI is expected to climb 3.8% in 2021 and at a rate of 2.6% in 2022 (graph 7).

GRAPH 7
Inflation has soared in the United States recently, and it will stay high in the coming months



CPI: Consumer price index
Sources: Bureau of Labor Statistics and Desjardins, Economic Studies

TABLE 3

United States: Major economic indicators

QUARTERLY ANNUALIZED VARIATION IN % (EXCEPT IF INDICATED)	2020		2021				ANNUAL AVERAGE			
	Q3	Q4	Q1	Q2f	Q3f	Q4f	2019	2020	2021f	2022f
Real GDP (2012 US$)	**33.4**	**4.3**	**6.4**	**11.4**	**5.8**	**4.5**	**2.2**	**-3.5**	**6.8**	**4.0**
Personal consumption expenditures	41.0	2.3	11.3	11.8	6.6	4.9	2.4	-3.9	8.4	4.1
Residential construction	63.0	36.6	12.7	4.0	7.9	7.3	-1.7	6.1	15.1	4.6
Business fixed investment	22.9	13.1	10.8	8.5	7.4	7.4	2.9	-4.0	8.6	7.6
Inventory change (US$B)	-3.7	62.1	-92.9	-15.0	25.0	50.0	48.5	-77.4	-8.2	50.0
Public expenditures	-4.8	-0.8	5.8	4.8	0.1	-0.3	2.3	1.1	1.7	1.2
Exports	59.6	22.3	-2.9	13.0	7.0	7.5	-0.1	-12.9	5.8	7.4
Imports	93.1	29.8	6.7	10.0	10.0	9.0	1.1	-9.3	13.9	8.0
Final domestic demand	29.8	4.4	10.3	9.9	5.6	4.5	2.3	-2.7	7.5	4.1
Other indicators										
Nominal GDP	38.3	6.3	11.0	17.9	9.6	6.6	4.0	-2.3	10.4	6.7
Real disposable personal income	-17.4	-7.6	61.7	-15.0	-13.8	-4.6	2.2	6.0	5.6	-3.2
Employment according to establishments	23.3	5.1	2.1	4.5	6.4	5.9	1.3	-5.7	2.8	3.8
Unemployment rate (%)	8.8	6.8	6.2	5.9	5.3	4.8	3.7	8.1	5.6	4.4
Housing starts[1] (thousands of units)	1,440	1,575	1,599	1,595	1,703	1,703	1,296	1,396	1,650	1,740
Corporate profits*[2]	3.5	-0.7	12.7	31.0	4.0	6.0	0.3	-5.8	12.4	3.7
Personal saving rate (%)	15.7	13.6	21.4	15.8	11.2	9.1	7.6	16.2	14.4	8.1
Total inflation rate*	1.3	1.2	1.9	4.7	4.5	4.3	1.8	1.2	3.8	2.6
Core inflation rate*[3]	1.7	1.6	1.4	3.6	3.7	3.8	2.2	1.7	3.1	2.8
Current account balance (US$B)	-724	-754	-840	-843	-878	-905	-480	-647	-866	-945

f: forecasts; * Annual change; [1] Annualized basis; [2] Before taxes; [3] Excluding food and energy.
Sources: Datastream and Desjardins, Economic Studies

Canada

A Final Blow before the Great Reopening

FORECASTS

Since the third wave of COVID-19 is expected to affect the Canadian economy in April, we have had to downgrade our growth predictions for the second quarter. However, the current reopening should support a rebound in real GDP as early as the third quarter. Despite these more significant quarterly fluctuations, the picture for all of 2021 has not changed and we still predict a 6.3% increase in real GDP. A gain of 4.1% is expected for 2022.

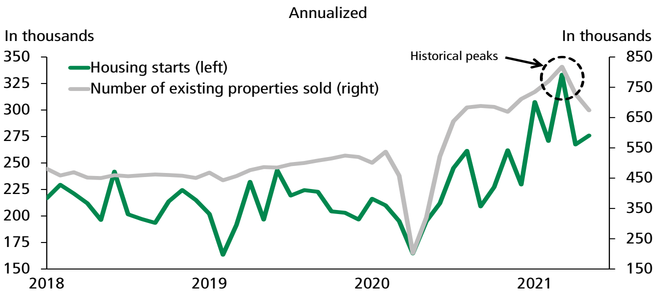
As expected, the Canadian economy stood up quite well to the restrictions imposed to counter the second wave of COVID-19 at the beginning of 2021. Real GDP rose 1.4% between the fourth quarter of 2020 and the first quarter of 2021, an annualized quarterly increase of 5.6%. Domestic demand climbed 6.4% (annualized quarterly) due to gains in almost all the components. Goods and services exports were up 6.0% and imports 4.3%. The trade balance therefore improved during the quarter, translating into a +0.5% contribution to the quarterly variation in real GDP.

Residential investment particularly stood out in the first quarter with a 43.3% increase (annualized) compared to the previous quarter. Housing starts and sales of existing properties reached new heights last March (graph 8). The vitality of the housing market may well calm down in the next few quarters, with several temporary factors that disrupted supply and demand during the pandemic returning to normal in the next few months.[1] Despite the expected drop, residential construction and sales of existing properties should remain high, historically speaking. That could translate into a slight reduction of residential investments in the coming quarters.

The third wave of COVID-19 had significant effects on the Canadian economy in the second quarter. Several provinces, including Ontario, brought in new health measures to counter the pandemic's spread in the spring. Statistics Canada's interim data indicates that real GDP by industry declined 0.8% in April, its first monthly decline in a year (graph 9). Even though things should gradually return to normal starting in May, economic growth for the entire second quarter will be affected.

GRAPH 8

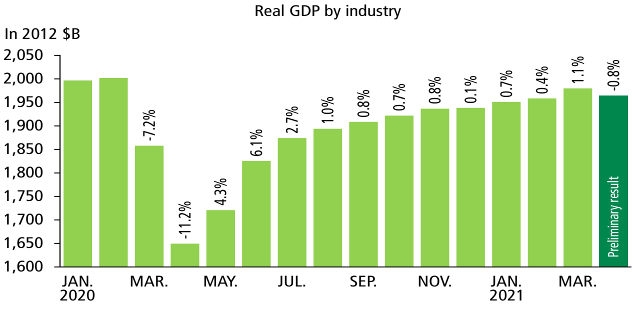
The housing market reached an all-time peak last March



Sources: Canada Mortgage and Housing Corporation, Canadian Real Estate Association and Desjardins, Economic Studies

GRAPH 9

The second quarter started on a negative note due to the negative effects of the third wave of the pandemic



Sources: Statistics Canada and Desjardins, Economic Studies

That said, the growth outlook for the Canadian economy remains very good. The sharp drop in COVID-19 cases and the successful vaccination campaign are prompting the provinces to start lifting their health restrictions. In these circumstances, Canada's real GDP should bounce back in the third quarter and maintain relatively strong growth. The recovery could speed up in some sectors that are still lagging significantly, like restaurants, accommodation and recreation.

Inflation will have to be watched closely in the coming months. The total annual inflation rate went from 1.0% in last January to 3.6% in May. A large part of that increase is due to an arithmetical effect, comparing gas prices to their very low levels this time last year, in the middle of the first wave of COVID-19. In

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[1] For further details on the housing market, see: *Will Canada's Housing Market Lose Steam Any Time Soon?*, Desjardins, Economic Studies, *Economic Viewpoint*, June 10, 2021, 10 p.

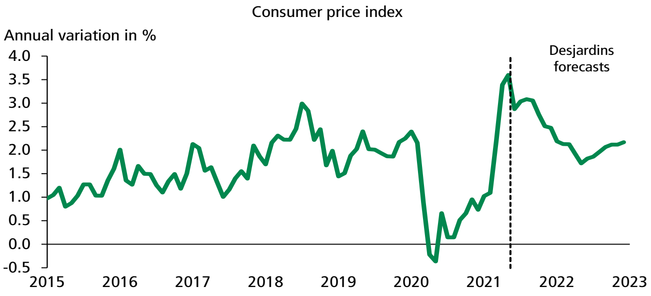
TABLE 4
Canada: Major economic indicators

QUARTERLY ANNUALIZED VARIATION IN % (EXCEPT IF INDICATED)	2020		2021				ANNUAL AVERAGE			
	Q3	Q4	Q1	Q2f	Q3f	Q4f	2019	2020	2021f	2022f
Real GDP (2012 $)	**41.7**	**9.3**	**5.6**	**2.7**	**8.4**	**5.7**	**1.9**	**-5.3**	**6.3**	**4.1**
Final consumption expenditure [of which:]	49.8	2.5	3.4	3.1	7.9	7.7	1.7	-4.4	5.4	5.2
Household consumption expenditure	*63.9*	*0.9*	*2.7*	*2.3*	*8.9*	*10.2*	*1.6*	*-6.0*	*5.3*	*7.1*
Governments consumption expenditure	*22.0*	*5.7*	*6.2*	*5.1*	*5.1*	*1.1*	*2.0*	*-0.3*	*5.8*	*0.3*
Gross fixed capital formation [of which:]	66.3	10.6	17.0	-9.4	7.9	5.7	0.3	-3.7	8.2	3.4
Residential structures	*181.9*	*16.9*	*43.3*	*-25.1*	*-3.3*	*-4.6*	*-0.2*	*4.1*	*15.4*	*-4.4*
Non-residential structures	*-8.4*	*-6.3*	*2.5*	*2.3*	*16.6*	*14.2*	*1.1*	*-11.3*	*-2.9*	*10.1*
Machinery and equipment	*96.3*	*28.1*	*-10.2*	*-11.0*	*10.4*	*9.9*	*1.0*	*-17.4*	*3.0*	*7.1*
Intellectual property products	*24.0*	*6.9*	*13.9*	*-14.0*	*17.3*	*14.7*	*-1.9*	*-3.5*	*5.3*	*9.3*
Governments gross fixed capital formation	*29.6*	*8.2*	*3.8*	*2.2*	*13.1*	*7.9*	*0.3*	*4.1*	*7.5*	*4.2*
Investment in inventories (2012 $B)	-37.1	-0.3	-8.5	8.2	22.0	22.5	18.8	-15.9	11.0	11.5
Exports	72.3	4.1	6.0	1.8	11.9	7.7	1.3	-10.0	6.4	6.6
Imports	117.4	11.6	4.3	4.6	18.8	12.2	0.4	-11.2	10.1	8.7
Final domestic demand	53.3	4.3	6.4	0.7	10.6	7.1	1.4	-4.3	6.5	4.6
Other indicators										
Nominal GDP	54.9	15.4	18.4	7.8	10.9	8.0	3.6	-4.6	13.1	5.9
Real disposable personal income	-22.0	-4.3	7.6	3.2	1.3	-14.2	2.2	9.5	0.9	-0.1
Employment	38.5	9.9	1.0	2.2	9.4	3.6	2.2	-5.2	4.9	3.5
Unemployment rate (%)	10.1	8.8	8.4	8.0	6.8	6.4	5.7	9.5	7.4	6.0
Housing starts[1] (thousands of units)	239	240	304	273	267	254	209	218	274	234
Corporate profits*[2]	6.8	9.4	45.1	45.0	8.0	12.0	0.6	-4.0	25.3	7.8
Personal saving rate (%)	13.5	11.9	13.1	13.2	11.6	5.8	1.4	14.5	10.9	4.3
Total inflation rate*	0.3	0.8	1.4	3.3	3.1	2.6	1.9	0.7	2.6	2.0
Core inflation rate*[3]	0.6	1.1	1.0	2.0	2.1	1.7	2.0	1.1	1.7	1.5
Current account balance ($B)	-9.9	-5.3	1.2	2.5	-1.2	-3.0	-47.4	-40.1	-0.6	-22.8

f: forecasts; * Annual change; [1] Annualized basis; [2] Before taxes; [3] Excluding food and energy.
Sources: Datastream and Desjardins, Economic Studies

theory, that effect should fade in the coming months, dropping the annual total inflation rate closer to the median target of 2% (graph 10). Despite that forecast, the risks remain on the upside, as imbalances remain between supply and demand for certain goods and services. There is a danger that those imbalances get worse in the coming months as many activities pick up again. In addition, nearly 41.9% of the components of the consumer price index basket showed an annual change above the upper 3% range in May. This is a proportion not seen since March 2010, indicating more widespread inflationary pressures.

GRAPH 10
Inflation should trend downwards slightly in the coming months



Sources: Statistics Canada and Desjardins, Economic Studies

Quebec

The Recovery of the Economy Is Almost Complete

FORECASTS

Despite the new health restrictions imposed last winter and spring, Quebec's economy has stood up better than expected. Real GDP continued to grow, almost reaching the level of February 2020. The 2021 forecasts are therefore more favourable than before, and real GDP should climb 7.2%. The 3.5% growth forecast for 2022 will be slower, mainly because the residential sector will calm down. The unemployment rate, which is around 6.5%, will dip below 5% next year, returning to pre-pandemic levels.

After a slight drop in October 2020, economic activity has been on the rise since November despite the closures that have occurred as different regions of Quebec have moved into the red zone. Real GDP growth even sped up 1.1% in February as the province's non-essential retail businesses reopened, as well as restaurants in some regions that were then in the orange zone.

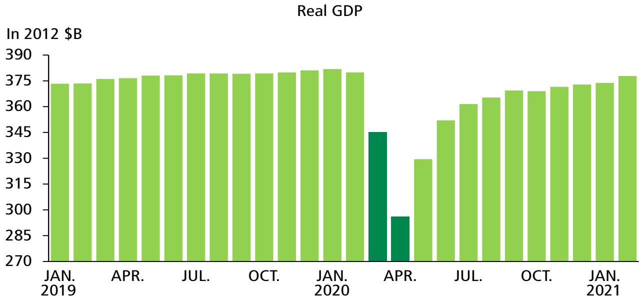
Although some industries, especially accommodation and restaurants, face a steeper uphill climb, the economy overall has been surprising. A recent *Economic Viewpoint* provides the diagnostic for each industry. The resilience of the sectors less affected by the pandemic has led to a faster-than-expected recovery of real GDP (graph 11). In February 2021 the overall economic activity was at 99.4% of its February 2020 level, just before the pandemic broke out. That means Quebec's economy has bounced back quite quickly, despite the fragility of several industries. The gradual easing of restrictions, which continued in June, and the gradual removal of constraints on international travel will give a boost to the most affected sectors.

That should allow spending on services to rebound in the coming quarters. Up to now, only spending on consumer goods has rebounded, while services (including the tourism sector) have been paralyzed by the long shutdown. Households have been purchasing goods like building materials, sports items and leisure vehicles, all of which have skyrocketed since the pandemic started. Now spending on services will have to catch up. High savings levels and the rapid recovery of the labour market have given consumers considerable leeway.

The unemployment rate has fallen significantly from its peak of 17.6% in April 2020. It is already below 5% in several regions of Quebec (graph 12), reflecting the labour shortages in several sectors. The coming end to some of the federal government's financial measures supporting workers affected by COVID-19 should lead to more hiring in some businesses. However, with immigration slowing since the start of the pandemic, foreign labor is scarcer, limiting recruitment opportunities for employers.

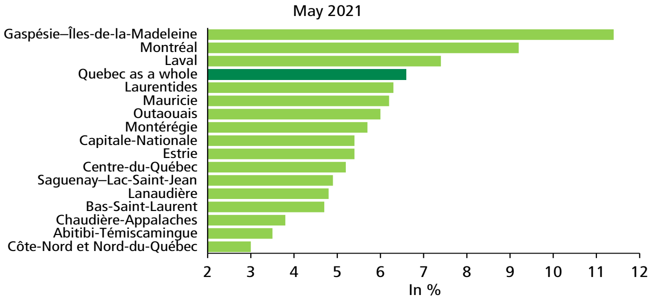
The residential sector is losing steam. Housing starts and property sales are moving away from the peak reached a few months ago, but still remain at a high level. On the existing market, average price seem to have stabilized after the staggering increases in the past year. However, the decline in affordability, due to the surge in prices as well as the tightening of mortgage rules since June 1, will limit the maximum loan amount and the number of potential buyers.

GRAPH 11
Quebec's economy has been more resilient since fall 2020 than when the pandemic first started



Sources: Institut de la statistique du Québec and Desjardins, Economic Studies

GRAPH 12
Unemployment is already back below 5% in several of Quebec's administrative regions



Sources: Statistics Canada and Desjardins, Economic Studies

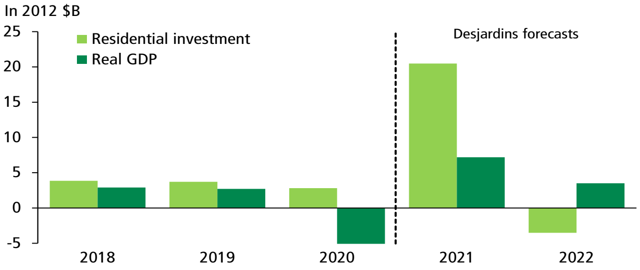
TABLE 5
Quebec: Major economic indicators

ANNUAL AVERAGE IN % (EXCEPT IF INDICATED)	2018	2019	2020	2021f	2022f
Real GDP (2012 $)	**2.9**	**2.7**	**-5.3**	**7.2**	**3.5**
Final consumption expenditure [of which:]	2.4	2.1	-4.3	5.6	5.1
Household consumption expenditure	*2.7*	*2.1*	*-5.6*	*6.0*	*6.2*
Governments consumption expenditure	*1.7*	*2.2*	*-0.8*	*4.7*	*2.8*
Gross fixed capital formation [of which:]	4.0	3.2	-1.6	8.9	0.7
Residential structures	*3.9*	*3.7*	*2.8*	*20.5*	*-3.5*
Non-residential structures	*3.0*	*6.3*	*-3.9*	*-1.9*	*2.0*
Machinery and equipment	*-0.4*	*7.3*	*-14.0*	*1.0*	*2.7*
Intellectual property products	*3.9*	*-0.6*	*-3.6*	*3.3*	*1.9*
Governments gross fixed capital formation	*8.2*	*-0.9*	*1.6*	*3.4*	*4.5*
Investment in inventories (2012 $B)	2,202	4,066	-4,942	3,500	4,500
Exports	3.8	1.7	-11.7	6.4	6.1
Imports	2.4	1.9	-13.2	7.3	7.5
Final domestic demand	2.7	2.3	-3.7	6.3	4.3
Other indicators					
Nominal GDP	5.4	4.3	-4.0	9.7	5.4
Real disposable personal income	2.8	3.5	7.4	1.7	0.1
Weekly earnings	3.2	3.5	7.8	4.5	2.3
Employment	1.5	2.0	-4.8	4.5	3.3
Unemployment rate (%)	5.5	5.1	8.9	6.0	4.7
Personal saving rate (%)	5.3	6.8	18.3	14.4	8.6
Retail sales	3.6	0.9	-0.2	17.6	5.5
Housing starts[1] (thousands of units)	46.9	48.0	54.1	69.0	58.0
Total inflation rate	1.7	2.1	0.8	2.8	2.0

f: forecasts; [1] Annualized basis.
Sources: Statistics Canada, Institut de la statistique du Québec, Canada Mortgage and Housing Corporation and Desjardins, Economic Studies

Housing starts will also be slowed by other factors: construction costs and land prices, which are way up, plus ever-increasing delivery delays that are discouraging some buyers. In short, the residential real estate market's excitement will fade in Quebec. The increase in residential investment will reach 20% in 2021, thanks to an exceptional start to the year. This will be the strongest increase in some 20 years. The housing market's thrust to the economy will drop off and will contribute to slowing the growth of real GDP down to 3.5% next year (graph 13), which is still quite a rapid pace.

GRAPH 13
Residential investment will curb Quebec's rising real GDP in 2022



Sources: Institut de la statistique du Québec and Desjardins, Economic Studies

Ontario and Other Provinces

The Last Shall Be First

FORECASTS

The restrictive measures introduced to counter the third wave of COVID-19 have varied widely from one province to another. But all of the provinces should see their real GDP rebound significantly this year after the hard times of 2020. Alberta could see the largest increase this year, thanks in large part to the rebound in the energy sector. Alberta had the greatest decline in production last year. In Ontario, real GDP may grow at a slower pace than the national average in 2021 due to the more adverse effects of the third wave. British Columbia is expected to enjoy economic growth similar to the national average in 2021, while real GDP growth may be below the national average for the other provinces.

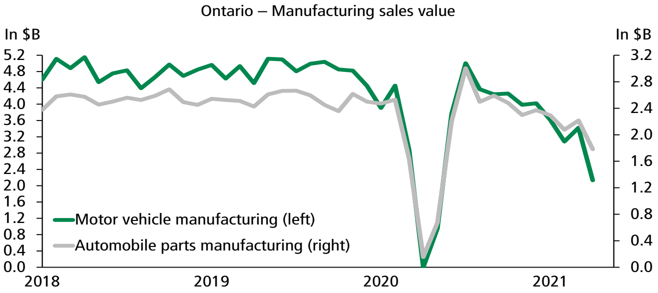
ONTARIO

According to our provisional estimates, Ontario's economic growth slightly exceeded the national average in the first quarter of 2021 with a 5.9% growth of real GDP (annualized quarterly), compared to 5.6% for Canada as a whole. That should turn around in the second quarter. The third wave of COVID-19 was particularly virulent in Ontario, with the result that several very restrictive health measures had to be introduced in April. Even though those measures started to be eased in June, the real GDP should fall in the second quarter. The success of the vaccination campaign, the sharp drop in cases and the reopening, should lead to a significant rebound in Ontario's real GDP in the third quarter. Those ups and downs impact our forecast for Ontario's real GDP for the full year 2021, from 5.9% to 5.5%. A gain of 4.5% is expected in 2022.

Ontario's economy could also be affected by other disruptions in the coming quarters. First, the motor vehicle industry is having difficulties with supplies of certain parts, due to a worldwide shortage of semi-conductors. All of the large motor vehicle manufacturers in Ontario have had to cut down on production. That pushed the value of motor vehicle manufacturers' sales down 47.0% between December 2020 and April 2021, while the sales of auto parts manufacturers fell 24.9% (graph 14). The shortage has not been resolved, and it may continue for some time, prolonging the significant fluctuations in Ontario's manufacturing sector.

Second, the housing market, one of the main drivers of economic growth in recent months, shows signs of cooling down. While housing starts and existing home sales will remain historically high in the coming months, they will be down from recent peaks. This will be consistent with a better balance between supply and demand as temporary factors arising from the pandemic gradually fade.

GRAPH 14
Ontario's motor vehicle industry has been in difficulty for some months



Sources: Statistics Canada and Desjardins, Economic Studies

WESTERN PROVINCES

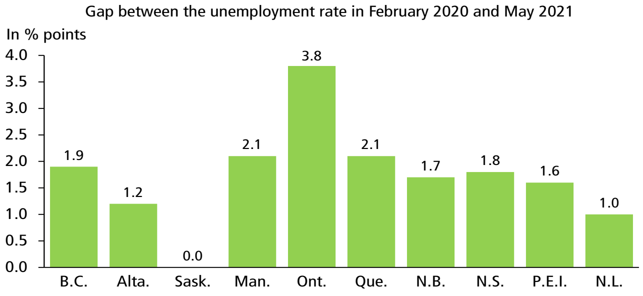
The third wave of COVID-19 was also felt in several areas of Western Canada and sanitary measures had to be introduced in the spring. However, these temporary difficulties will not prevent real GDP in all provinces in the region from rebounding in 2021, after significant declines in 2020. In addition, demand for commodities has increased significantly, whether for forestry products due to the vitality of North American residential construction or for energy products. Crop and livestock production and mining have also accelerated in recent months. Notably, this has allowed Saskatchewan to be the first province to see its unemployment rate drop to its pre-pandemic level of 6.3% in May (graph 15 on page 13).

TABLE 6
Ontario: Major economic indicators

ANNUAL AVERAGE IN % (EXCEPT IF INDICATED)	2018	2019	2020	2021f	2021f
Real GDP (2012 $)	**2.8**	**2.1**	**-5.8**	**5.5**	**4.5**
Final consumption expenditure [of which:]	3.2	1.8	-5.0	5.1	6.4
Household consumption expenditure	*2.9*	*1.9*	*-6.1*	*4.8*	*8.0*
Governments consumption expenditure	*4.0*	*1.4*	*-1.7*	*5.9*	*1.4*
Gross fixed capital formation [of which:]	4.3	-0.7	-1.2	12.6	3.3
Residential structures	*-3.6*	*0.5*	*7.9*	*23.1*	*-3.1*
Non-residential structures	*19.8*	*-4.3*	*-11.1*	*-0.7*	*9.1*
Machinery and equipment	*6.5*	*-0.6*	*-14.1*	*5.7*	*6.9*
Intellectual property products	*6.2*	*-1.1*	*-3.6*	*8.1*	*10.6*
Governments gross fixed capital formation	*6.1*	*0.8*	*0.5*	*6.1*	*4.1*
Investment in inventories (2012 $B)	7,613	8,728	-6,133	2,244	-2,479
Exports	1.1	2.1	-8.7	6.6	7.2
Imports	2.3	0.6	-9.2	11.6	8.6
Final domestic demand	3.4	1.2	-4.2	6.7	5.8
Other indicators					
Nominal GDP	4.1	3.8	-4.8	9.7	6.7
Real disposable personal income	2.7	2.6	9.5	2.5	2.6
Weekly earnings	2.9	2.7	7.3	5.6	2.6
Employment	1.7	2.8	-4.8	4.4	3.7
Unemployment rate (%)	5.7	5.6	9.6	8.5	7.1
Personal saving rate (%)	-1,0	-0,6	13,4	11.8	6.9
Retail sales	4.5	2.3	-3.5	8.7	6.6
Housing starts[1] (thousands of units)	78.7	69.0	81.3	99.0	86.4
Total inflation rate*	2.4	1.9	0.7	2.6	2.1

f: forecasts; * Annual change; [1] Annualized basis.
Sources: Statistics Canada, Ontario's Ministry of Finance, Canada Mortgage and Housing Corporation and Desjardins, Economic Studies

GRAPH 15
Saskatchewan's labour market improved especially



Sources: Statistics Canada and Desjardins, Economic Studies

ATLANTIC PROVINCES

The health measures will also have an impact on the economies of the Atlantic provinces. The uncertainties over border restrictions could continue to stifle the tourism industry this summer, and that would delay the rebound of real GDP expected for the region. In Newfoundland and Labrador, oil production at the Hebron site has reached its cruising speed in the past few months. But that will not be enough to offset the downtrend in most of the other extraction sites. It will dampen the positive effect of increased gas prices for the province.

TABLE 7

Canada: Major economic indicators by provinces

ANNUAL AVERAGE IN % (EXCEPT IF INDICATED)	2018	2019	2020	2021f	2022f
Real GDP growth – Canada	**2.4**	**1.9**	**-5.3**	**6.3**	**4.1**
Atlantic	-0.1	2.7	-3.9	4.8	2.8
Quebec	2.9	2.7	-5.3	7.2	3.5
Ontario	2.8	2.1	-5.8	5.5	4.5
Manitoba	1.5	0.6	-4.8	5.5	3.5
Saskatchewan	1.2	-0.7	-5.0	5.5	4.0
Alberta	1.9	0.1	-8.0	7.5	4.2
British Columbia	2.7	2.7	-3.8	6.3	4.5
Total inflation rate – Canada	**2.3**	**1.9**	**0.7**	**2.6**	**2.0**
Atlantic	2.0	1.5	0.2	3.3	2.0
Quebec	1.7	2.1	0.8	2.8	2.0
Ontario	2.4	1.9	0.7	2.6	2.1
Manitoba	2.5	2.2	0.5	2.4	2.0
Saskatchewan	2.3	1.7	0.6	2.1	1.9
Alberta	2.4	1.8	1.1	2.4	2.0
British Columbia	2.7	2.3	0.8	2.0	1.8
Employment growth – Canada	**1.6**	**2.2**	**-5.2**	**4.9**	**3.5**
Atlantic	1.3	1.7	-4.1	3.8	2.0
Quebec	1.5	2.0	-4.8	4.5	3.3
Ontario	1.7	2.8	-4.8	4.4	3.7
Manitoba	1.1	1.0	-3.7	4.8	2.5
Saskatchewan	0.5	1.9	-4.7	4.5	2.5
Alberta	1.9	0.7	-6.6	6.2	4.0
British Columbia	1.4	3.0	-6.6	7.0	3.7
Unemployment rate – Canada	**5.9**	**5.7**	**9.5**	**7.4**	**6.0**
Atlantic	9.2	8.7	10.8	8.7	7.1
Quebec	5.5	5.1	8.9	6.0	4.7
Ontario	5.7	5.6	9.6	8.5	7.1
Manitoba	6.0	5.3	8.0	6.5	5.3
Saskatchewan	6.2	5.6	8.4	6.0	5.0
Alberta	6.7	7.0	11.4	8.0	6.5
British Columbia	4.7	4.7	8.9	6.3	5.0
Retail sales growth – Canada	**3.0**	**1.2**	**-1.3**	**12.5**	**5.9**
Atlantic	0.2	1.9	0.1	14.1	6.1
Quebec	3.6	0.9	-0.2	17.6	5.5
Ontario	4.5	2.3	-3.5	8.7	6.6
Manitoba	2.2	0.8	0.8	16.0	6.0
Saskatchewan	-0.5	0.3	-1.1	9.5	4.0
Alberta	1.8	-0.8	-2.3	13.0	5.5
British Columbia	1.9	0.6	2.4	12.5	5.5
Housing starts – Canada (thousands of units)	**212.8**	**208.7**	**217.8**	**274.4**	**233.8**
Atlantic	9.3	10.1	10.3	12.1	9.9
Quebec	46.9	48.0	54.1	69.0	58.0
Ontario	78.7	69.0	81.3	99.0	86.4
Manitoba	7.4	6.9	7.3	7.3	6.0
Saskatchewan	3.6	2.4	3.1	5.7	4.5
Alberta	26.1	27.3	24.0	33.5	29.0
British Columbia	40.9	44.9	37.7	47.8	40.0

f: forecasts
Sources: Statistics Canada, Institut de la statistique du Québec, Ontario's Ministry of Finance, Canada Mortgage and Housing Corporation and Desjardins, Economic Studies

Medium-Term Issues and Forecasts

Interest Rate Hikes Will Limit the Overheating

The current cycle might be strong, with a rapid return to above the potential GDP. Inflationary pressures should be more marked compared to the previous decade. The monetary tightening will have to start at the end of 2022 to avoid overheating. Governments may also help reduce inflationary pressures by starting a new round of consolidating public finances. That said, it will be a hard road to a balanced budget as the ambitious greenhouse gas reduction targets will require serious investments. Health care spending is also likely to remain high.

A More Inflationary Cycle than the Previous One

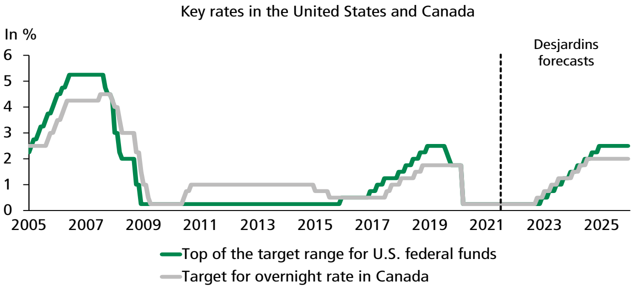
The new economic cycle that has begun looks to be special with all the support measures designed to spark a rapid rebound of real GDP. A lot of money has been saved up during the months of confinement, some of which will be released into consumer spending in the coming quarters. Contrary to the previous cycle, real GDP should quickly exceed its long-term trend, also know as potential GDP. Potential GDP is an estimation of what the economy can produce by using the available production capacities normally, not to excess. During the previous economic cycle we had been waiting more than eight years after the 2009 low point for the U.S. real GDP to climb back above the potential GDP. Once that point is reached, inflationary pressures are usually greater.

Money Tightening Could Limit Inflation

Whatever happens, the central banks can easily rein in inflation. As the new economic cycle progresses, monetary policy can be adjusted to keep inflation close to official target. In our scenario, we expect the Federal Reserve (Fed) to start raising its key rates at the end of 2022 and the top of the target range for federal funds should reach 2.50% at the end of 2024. In Canada, key rates should start to be raised in the fall of 2022. They will probably be increased by about 25 basis points per quarter, bringing the overnight rate to 2.00% in the summer of 2024 (graph 16).

Key rate levels in 2024 should be close to those of 2019. If inflationary pressures become more threatening, the central banks could always react more rapidly or announce more rate hikes. The high debt levels of governments and some households and businesses indicate, however, that interest rate increases will quickly have a dampening effect on the economy. After the strong growth of real GDP in 2021 and 2022, the medium-term pace should converge below 2% in the United States, Canada and Quebec. The raising of interest rates will also have medium-term moderating impacts on the real estate market and the stock markets.

GRAPH 16
Toward a raising of key rates in the next few years



Sources: Datastream and Desjardins, Economic Studies

Cleaning up Public Finances as Well as the Planet!

We should expect the governments to try to reach an healthier balance of their public finances in the next few years, after spending so strongly during the pandemic. Either by reining in public expenditures or by increasing taxes, cleaning up public finances would also have the effect of mitigating economic growth and reducing inflationary pressures.

However, the governments will face another major challenge, one that could fly in the face of better-balanced public finances. The commitments for protecting the planet, particularly for reducing greenhouse gases, are more and more ambitious. If governments want to meet their goals, they will have to start investing serious money in the next few years. Businesses and households may also have to take on added costs to comply with higher environmental protection standards, and it will be hard to ask them for more tax dollars. Wise choices will have to be made to keep everything in balance.

TABLE 8

Medium-term major economic and financial indicators

	ANNUAL AVERAGE							AVERAGES	
IN % (EXCEPT IF INDICATED)	2019	2020	2021f	2022f	2023f	2024f	2025f	2016–2020	2021–2025f
United States									
Real GDP (var. in %)	2.2	-3.5	6.8	4.0	2.3	1.9	1.6	1.1	3.3
Total inflation rate (var. in %)	1.8	1.2	3.8	2.6	2.3	2.1	2.0	1.8	2.6
Unemployment rate	3.7	8.1	5.6	4.4	3.8	3.6	3.5	5.0	4.2
S&P 500 index (var. in %)[1]	28.9	16.3	13.2	8.2	5.0	4.0	4.0	13.6	6.9
Federal funds rate	2.28	0.54	0.25	0.25	0.90	1.90	2.50	1.27	1.16
Prime rate	5.28	3.54	3.25	3.25	3.90	4.90	5.50	4.27	4.16
Treasury bills – 3-month	2.10	0.37	0.05	0.20	0.90	1.90	2.40	1.14	1.09
Federal bonds – 10-year	2.14	0.89	1.65	2.25	2.65	3.00	3.10	2.02	2.53
– 30-year	2.58	1.56	2.25	2.85	3.20	3.45	3.55	2.55	3.06
WTI oil (US$/barrel)	57	39	64	66	64	63	61	51	64
Gold (US$/ounce)	1,393	1,771	1,785	1,665	1,630	1,600	1,600	1,388	1,656
Canada									
Real GDP (var. in %)	1.9	-5.3	6.3	4.1	2.0	1.8	1.6	0.6	3.2
Total inflation rate (var. in %)	1.9	0.7	2.6	2.0	2.1	1.9	2.0	1.6	2.1
Employment (var. in %)	2.2	-5.2	4.9	3.5	1.7	1.3	1.0	0.3	2.5
Employment (thousands)	418	-986	876	663	323	257	210	41	466
Unemployment rate	5.7	9.5	7.4	6.0	5.7	5.3	4.9	6.9	5.8
Housing starts (thousands of units)	209	218	274	234	220	218	215	211	232
S&P/TSX index (var. in %)[1]	19.1	2.2	17.6	7.3	6.0	3.0	3.0	6.6	7.4
Exchange rate (US$/C$)	0.75	0.75	0.81	0.82	0.83	0.82	0.81	0.76	0.82
Overnight funds	1.75	0.56	0.25	0.30	1.05	1.80	2.00	0.98	1.08
Prime rate	3.95	2.75	2.45	2.50	3.25	4.00	4.20	3.18	3.28
Mortgage rate – 1-year	3.64	3.25	2.80	2.80	3.35	4.00	4.10	3.33	3.41
– 5-year	5.27	4.95	4.80	5.00	5.50	5.75	5.75	4.98	5.36
Treasury bills – 3-month	1.65	0.44	0.15	0.30	1.10	1.80	2.00	0.93	1.07
Federal bonds – 2-year	1.59	0.51	0.40	1.00	1.75	2.15	2.20	1.15	1.50
– 5-year	1.54	0.60	0.95	1.60	2.05	2.30	2.35	1.28	1.85
– 10-year	1.59	0.75	1.50	2.15	2.40	2.65	2.65	1.53	2.27
– 30-year	1.80	1.21	2.00	2.55	2.80	3.00	3.05	1.92	2.68
Yield spreads (Canada—United States)									
Treasury bills – 3-month	-0.45	0.07	0.10	0.10	0.20	-0.10	-0.40	-0.21	-0.02
Federal bonds – 10-year	-0.55	-0.14	-0.15	-0.10	-0.25	-0.35	-0.45	-0.49	-0.26
– 30-year	-0.78	-0.35	-0.25	-0.30	-0.40	-0.45	-0.50	-0.63	-0.38
Quebec									
Real GDP (var. in %)	2.7	-5.3	7.2	3.5	1.7	1.6	1.4	1.0	3.1
Total inflation rate (var. in %)	2.1	0.8	2.8	2.0	2.0	1.9	2.0	1.3	2.2
Employment (var. in %)	2.0	-4.8	4.5	3.3	1.5	1.2	1.0	0.4	2.3
Employment (thousands)	86	-209	184	140	67	56	46	-6	98
Unemployment rate	5.1	8.9	6.0	4.7	4.4	4.2	4.0	6.6	4.7
Retail sales (var. in %)	0.9	-0.2	17.6	5.5	4.0	3.5	3.0	3.3	6.7
Housing starts (thousands of units)	48	54	69	58	47	44	41	47	52
Ontario									
Real GDP (var. in %)	2.1	-5.8	5.5	4.5	2.3	2.0	1.7	0.8	3.2
Total inflation rate (var. in %)	1.9	0.7	2.6	2.1	2.1	2.0	2.0	1.7	2.2
Employment (var. in %)	2.8	-4.8	4.4	3.7	1.7	1.4	1.1	0.5	2.5
Employment (thousands)	204	-355	312	274	129	108	86	35	182
Unemployment rate	5.6	9.6	8.5	7.1	5.6	5.2	4.8	6.7	6.2
Retail sales (var. in %)	2.3	-3.5	8.7	6.6	4.0	3.5	3.0	3.6	5.2
Housing starts (thousands of units)	69	81	99	86	82	80	78	77	85

f: forecasts; WTI : West Texas Intermediate; [1] Variations are based on observation of the end of period.
Sources: Datastream, Statistics Canada, Institut de la statistique du Québec, Ontario's Ministry of Finance, Canada Mortgage and Housing Corporation and Desjardins, Economic Studies

Table 1: Canadian economic update

Variable	20Q4A	21Q1F	21Q2F	21Q3F	21Q4F	22Q1F	22Q2F	22Q3F	22Q4F	2020A	2021F	2022F
Real GDP growth (AR)	9.6	6.5	1.0	5.0	5.6	5.3	4.2	2.7	2.3	-5.4	5.7	4.3
Real final domestic demand (AR)	3.5	4.3	2.5	5.8	6.1	4.9	4.9	3.4	2.5	-4.5	5.4	4.7
Household consumption (AR)	-0.4	1.1	1.5	7.0	6.7	5.3	6.0	2.9	1.8	-6.1	4.0	5.1
All items CPI inflation (Y/Y)	0.8	1.4	2.7	2.2	2.0	1.8	1.6	2.0	2.2	0.7	2.1	1.9
Unemployment rate (%)	8.8	8.4	8.4	7.4	6.5	6.2	6.0	5.8	5.7	9.5	7.7	5.9

Table 2: US Economic update

Variable	20Q4A	21Q1F	21Q2F	21Q3F	21Q4F	22Q1F	22Q2F	22Q3F	22Q4F	2020A	2021F	2022F
Real GDP growth (AR)	4.3	6.4	9.5	6.3	5.4	4.3	2.7	2.5	2.3	-3.5	6.6	4.4
Real final sales (AR)	2.9	9.2	7.0	6.0	5.9	4.5	2.5	2.3	2.5	-2.9	6.1	4.3
All items CPI inflation (Y/Y)	1.2	1.9	4.0	3.3	3.5	3.1	2.3	2.6	2.7	1.2	3.2	2.7
Core CPI inflation (Y/Y)	1.6	1.4	3.0	2.5	2.6	2.9	2.4	2.8	2.9	1.7	2.4	2.7
Unemployment rate (%)	6.8	6.2	5.8	5.0	4.5	4.3	3.9	3.6	3.5	8.1	5.3	3.8

Table 3: Canadian interest rates (end of period)

Variable	2021 11-May	2021 Sep	2021 Dec	2022 Mar	2022 Jun	2022 Sep	2022 Dec
Overnight target rate	0.25	0.25	0.25	0.25	0.25	0.25	0.50
98-Day Treasury Bills	0.10	0.10	0.15	0.20	0.25	0.25	0.35
2-Year Government Bond	0.30	0.30	0.35	0.40	0.45	0.60	0.90
10-Year Government Bond	1.54	1.65	1.45	1.65	1.75	1.80	1.85
30-Year Government Bond	2.14	2.20	1.95	1.95	2.10	2.20	2.25
Canada - US T-Bill Spread	0.09	0.05	0.00	0.00	0.00	-0.15	-0.15
Canada - US 10-Year Bond Spread	-0.09	-0.10	-0.05	0.05	0.05	0.00	-0.15
Canada yield curve (10-year — 2-year)	1.24	1.35	1.10	1.25	1.30	1.20	0.95

Table 4: US Interest rates (end of period)

Variable	2021 11-May	2021 Sep	2021 Dec	2022 Mar	2022 Jun	2022 Sep	2022 Dec
Federal funds rate	0.125	0.125	0.125	0.125	0.125	0.375	0.625
91-Day Treasury Bills	0.01	0.05	0.15	0.20	0.25	0.40	0.50
2-Year Government Note	0.16	0.15	0.25	0.40	0.50	0.85	1.15
10-Year Government Note	1.62	1.75	1.50	1.60	1.70	1.80	2.00
30-Year Government Bond	2.35	2.40	2.25	2.30	2.40	2.50	2.70
US Yield curve (10-year — 2-year)	1.46	1.60	1.25	1.20	1.20	0.95	0.85

Table 5: Foreign exchange rates

Exchange rate	2021 11-May	2021 Sep	2021 Dec	2022 Mar	2022 Jun	2022 Sep	2022 Dec
CAD-USD	0.83	0.80	0.79	0.78	0.77	0.76	0.76
USD-CAD	1.21	1.25	1.27	1.28	1.30	1.31	1.31
USD-JPY	109	111	112	114	115	114	112
EUR-USD	1.22	1.21	1.20	1.20	1.19	1.18	1.17
GBP-USD	1.41	1.42	1.41	1.42	1.41	1.39	1.37
AUD-USD	0.78	0.82	0.83	0.84	0.85	0.86	0.87
USD-CNY	6.43	6.30	6.20	6.05	5.95	5.85	5.80
USD-BRL	5.25	5.50	5.30	5.10	5.30	5.50	5.70
USD-MXN	19.9	21.5	20.5	19.8	19.5	20.0	20.5

ECONOMIC RESEARCH AND STRATEGY

LAURENTIAN BANK SECURITIES

May 18th, 2021

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Financial Forecasts

	19Q4	20Q4	21Q1	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q4
Canada											
Overnight Rate Target	1.75	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	1.00
3-Month Treasury Bills	1.65	0.07	0.08	0.10	0.10	0.10	0.15	0.15	0.25	0.50	1.00
2-Year Bond	1.70	0.19	0.23	0.35	0.40	0.50	0.60	0.80	0.80	0.90	1.25
5-Year Bond	1.68	0.39	1.00	1.00	1.10	1.20	1.25	1.40	1.50	1.60	1.85
10-Year Bond	1.70	0.67	1.56	1.65	1.70	1.75	1.80	1.85	1.90	1.90	2.25
30-Year Bond	1.76	1.21	1.98	2.25	2.30	2.30	2.30	2.30	2.30	2.35	2.50
United States											
Federal Funds Rate Target*	1.75	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50
10-Year Bond	1.92	0.91	1.75	1.80	1.90	2.00	2.10	2.15	2.20	2.25	2.70
Canadian Dollar (US$/C$)	0.77	0.79	0.80	0.85	0.83	0.83	0.82	0.82	0.81	0.80	0.80
S&P 500 Index	3,231	3,756	3,973	4,250	4,400	4,500	4,600	4,650	4,700	4,800	5,050
TSX Index	17,063	17,433	18,701	19,500	20,000	21,000	21,500	21,750	22,000	22,500	23,500
Oil WTI (US$/barrel)	61	48	59	65	65	65	60	60	55	55	55

Quarter-end data
* Upper bound of the Fed's target range

Updated: May 2021

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Monthly Economic Monitor
Economics and Strategy

NATIONAL BANK OF CANADA
FINANCIAL MARKETS

June 2021

Summary

By Matthieu Arseneau and Jocelyn Paquet

- The daily number of new cases of Covid-19 declared around the world has been declining markedly over the last month. In the developed economies, the drop can be attributed in large part to an acceleration of vaccine rollouts encouraging an outlook of fuller and more lasting reopening of economies. Elsewhere, improvement in public health is due rather to reinforcement of physical distancing rules, especially in India where in late April a flare-up of cases forced the reintroduction of strict lockdowns in some regions. Since access to vaccines is much more limited in emerging countries, herd immunity is unlikely before 2022. Developing countries will accordingly remain at greater risk of pandemic outbreaks in the coming months, a factor that could mean higher volatility of growth rates. We nevertheless continue to expect a solid rebound of the global economy in 2021 and are maintaining our forecast of 6.0% growth for the year. In fact, our confidence in a vigorous recovery has risen, since distribution of vaccines has greatly reduced economic uncertainty and downside risks for growth.

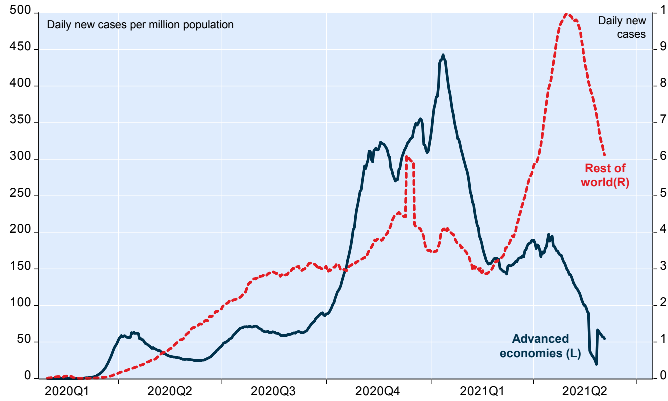
- The latest U.S. economic indicators confirm what has been our outlook for a few months now: a very strong revival stimulated by highly accommodative monetary and fiscal policies. Nonfarm payrolls grew 559,000 in May, less than the expected 675,000 but more than the month before, suggesting a slow but steady revival of the labour market in step with reopening of the economy. Also in May, headline 12-month CPI inflation was 5.0%, the highest in 13 years. For the CPI excluding food and energy the 12-month rise was 3.8%, the highest since June 1992. The three-month-annualized readings are still more impressive: headline inflation 8.4%, core inflation 8.3%. Up to now, the bulk of inflationary pressure has come in the goods-producing sector, but inflation could also take off in services if consumers decide, as we think they will, to spend more on activities unavailable in recent months (e.g. restaurant meals and travel). For the U.S. economy as a whole, we have left our forecast of 6.9% growth this year unchanged but have increased 2022 growth to 4.3% to reflect further government spending on infrastructure and social programs. In our projections, U.S. real GDP will be back to its potential by the third quarter of this year.

- Early in 2021, as the two largest provinces in Canada decreed shutdowns of non-essential businesses, public-health conditions seemed to augur little good for the Canadian economy in Q1. And all the other G7 countries except the U.S. did have GDP declines during the quarter. In Canada, however, not only did the contraction that many had apprehended not materialize, but the quarter ended with very solid real growth of 5.6% annualized, a showing that put the Canadian economy in a leading position. In real terms its output came within 1.7% of its peak pre-pandemic quarter (Q4 2019) – second-best in the G7. In nominal terms the Q1 growth was even more spectacular taking nominal GDP to a best-in-G7 3.0% above its pre-recession peak. This month we are keeping our forecast of real growth in 2021 at 6.0%. After a pause in the recovery in Q2 due to public-health measures and to production backlogs in the auto industry due to microchip shortages, impressive growth can be expected to continue as vaccination picked up speed allowing the reopening of services that entail physical proximity. Our forecast for 2021 growth in nominal terms is now 12.6%, unseen in 40 years.

World: Covid-19 down, economies up

The daily number of new cases of Covid-19 declared around the world has been declining markedly over the last month. In the developed economies, the drop can be attributed in large part to an acceleration of vaccine rollouts encouraging an outlook of fuller and more lasting reopening of economies. Elsewhere, improvement in public health is due rather to reinforcement of physical distancing rules, especially in India where in late April a flare-up of cases forced the reintroduction of strict lockdowns in some regions.

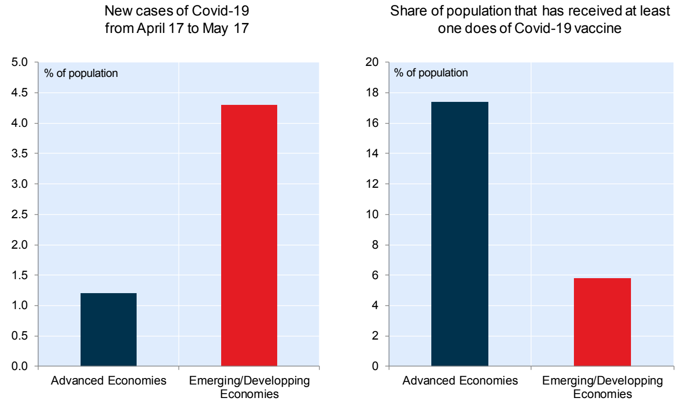
World: Pandemic in marked decline
Daily declared new cases of Covid-19 per million population, 7-day moving average



NBF Economics and Strategy (data from https://coronavirus.jhu.edu/map.html)

Since access to vaccines is much more limited in emerging countries, herd immunity is unlikely before 2022.

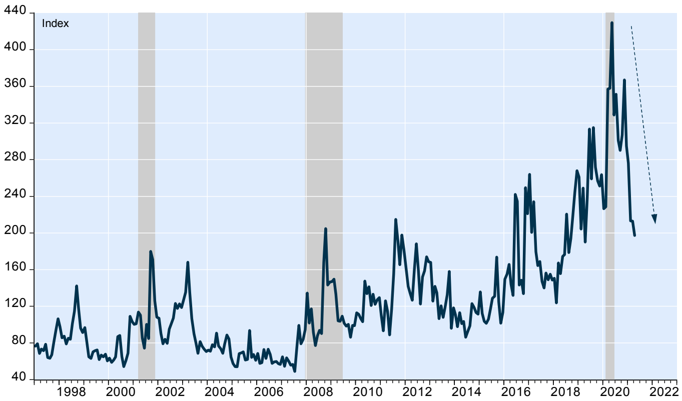
World: Vaccine less accessible in emerging countries



NBF Economics and Strategy (data from World Bank)

Developing countries will accordingly remain at greater risk of pandemic outbreaks in the coming months, a factor that could mean higher volatility of growth rates. We nevertheless continue to expect a solid rebound of the global economy in 2021 and are maintaining our forecast of 6.0% growth for the year. In fact, our confidence in a vigorous recovery has risen, since distribution of vaccines has greatly reduced economic uncertainty and downside risks for growth.

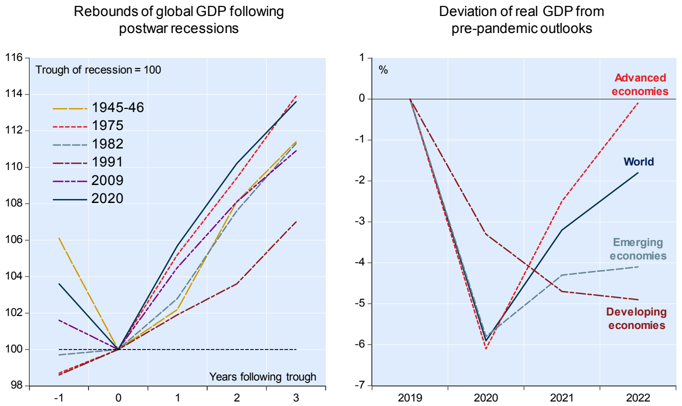
World: Vaccination reduces economic uncertainty
Global index of economic uncertainty



NBF Economics and Strategy (data from https://www.policyuncertainty.com/global_monthly.html)

Skies are likely to remain blue into 2022. The World Bank now thinks the rebound of GDP from the pandemic recession will be one of the strongest post-recession recoveries since the Second World War. Like the World Bank, we expect the rich countries to be the growth drivers in the short and medium term, likely to match their pre-pandemic output by 2022.

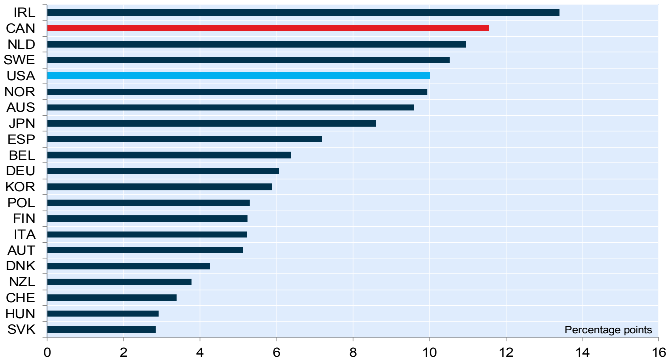
World: Strong but uneven recovery



NBF Economics and Strategy (data from World Bank)

Household consumption is likely to continue setting the pace. After months of restrictions, consumers in advanced economies will be able to take advantage of the excess savings they accumulated during the recession. Services, more affected by physical distancing, are likely to benefit the most.

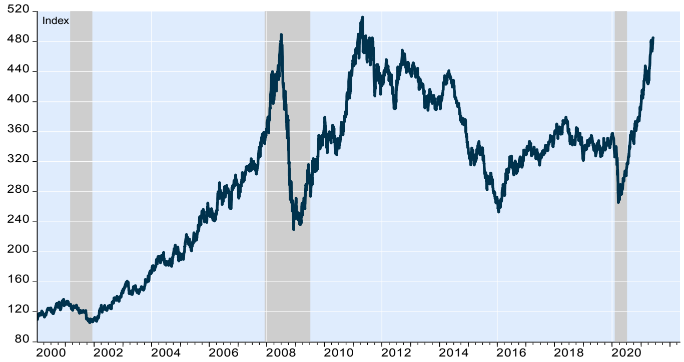
World: Increased saving during the pandemic will stimulate demand
Increase of 2020 rate of household saving over 2000-2019 average



NBF Economics and Strategy (data from Refinitiv)

For emerging countries our forecasts are more upbeat than those of the World Bank. In our view, demand from the world's better-off households will continue to support high commodity prices, to the benefit of a number of exporting countries.

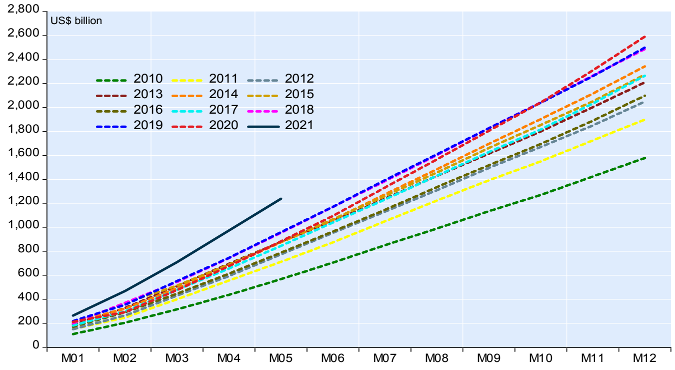
World: Commodity prices soar
Bloomberg index of commodity spot prices



NBF Economics and Strategy (data from Bloomberg)

The benefits of revival of foreign demand will not be limited to commodity-producing countries. On the contrary, all the economies geared to foreign trade – notably China's – are likely to benefit.

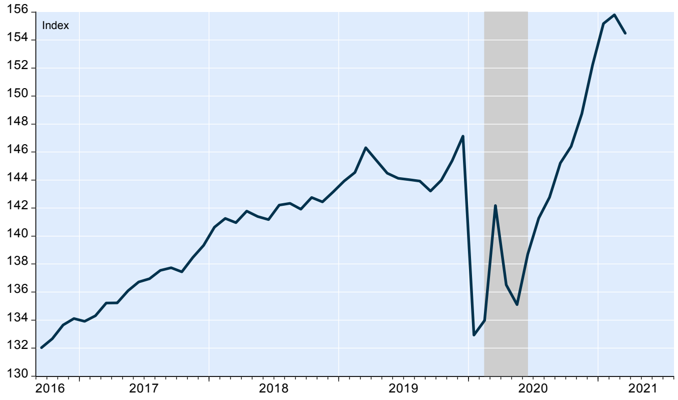
China: Growth stimulated by exports
Exports, cumulative from beginning of each year



NBF Economics and Strategy (data from Bloomberg)

The resilience of exports already explains much of the rapid rebound of industrial production in emerging economies.

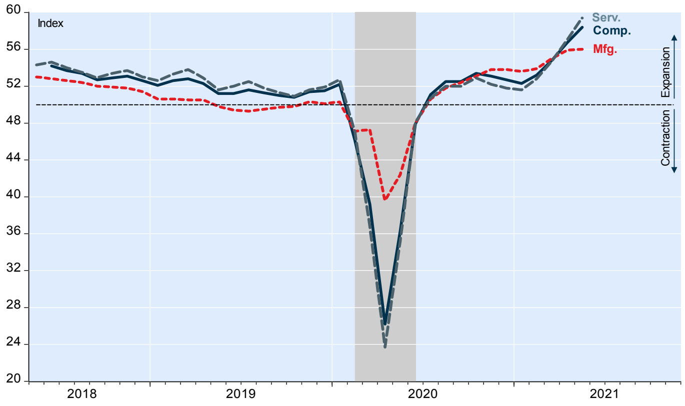
Emerging economies: A convincing rebound of industrial production
Seasonally adjusted data



NBF Economics and Strategy (data from CPB)

Demand-driven growth in advanced economies combined with supply-driven expansion in the emerging world bodes well for the second half of the year. Already in May, the global Markit/JPMorgan PMI reported the strongest private-sector expansion in 15 years. Business conditions in manufacturing were sustaining their improvement. Services, meanwhile, hit harder by the pandemic, showed the strongest growth since April 2006.

World: Private-sector growth strongest in 15 years
J.P.Morgan/Markit global PMI, last observation May 2021

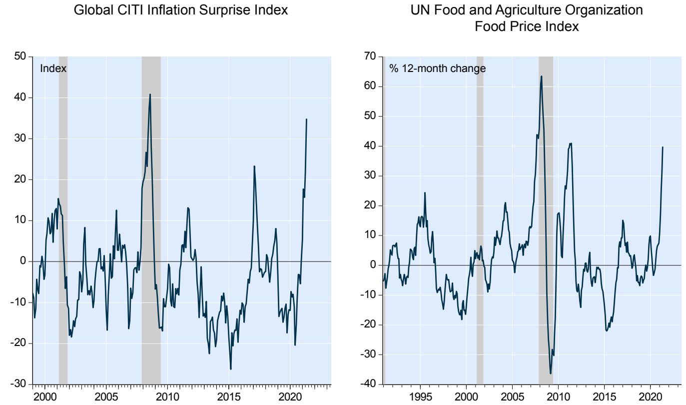


NBF Economics and Strategy (data from Markit via Refinitiv)

Resurgence of demand in step with phased reopening has brought headaches for many producers. Inability to meet the new demand has lengthened their production backlogs at the fastest pace in 17 years, resulting in longer delivery times and sharp rises of output prices. Microchip scarcity has only increased the pressure on supply chains.

At this writing, the inflationary pressures reported by surveys come more from the goods-producing sector. That said, as consumers in advanced economies become able to spend more freely, pressures are also likely to emerge in the services sector, driving price rises more vigorous than those we were used to before the pandemic. Global inflation is now surprising on the upside and we see this trend continuing in the months ahead. We note in particular a rapid increase in food prices – a big part of the consumption basket, especially in emerging countries.

World: Higher inflation likely as lockdowns ease



NBF Economics and Strategy (data from Bloomberg)

The stage is accordingly set for a second half of the year marked by strongly accelerating global growth and by inflation higher than the average of recent years.

World Economic Outlook			
	2020	2021	2022
Advanced Economies	-4.9	5.4	4.1
United States	-3.5	6.9	4.3
Eurozone	-6.6	4.6	4.5
Japan	-4.7	2.8	2.5
UK	-11.1	6.0	5.4
Canada	-5.3	6.0	4.0
Australia	-3.2	4.4	3.1
Korea	-1.1	4.0	3.1
Emerging Economies	-2.5	6.3	4.8
China	2.3	8.7	5.6
India	-7.3	7.5	7.0
Mexico	-8.3	4.8	3.0
Brazil	-4.1	4.0	2.6
Russia	-3.0	3.5	3.0
World	-3.5	6.0	4.5

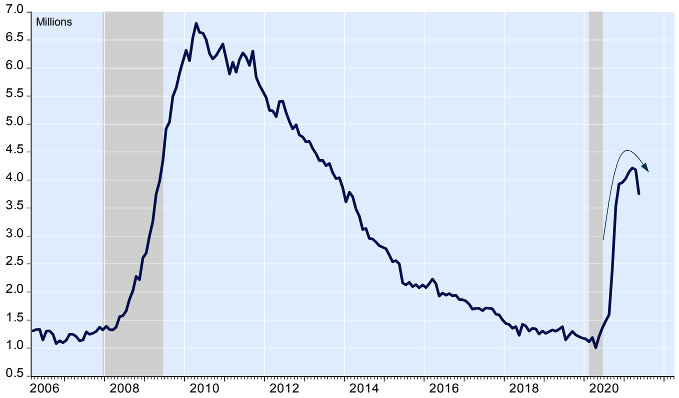
NBF Economics and Strategy (data via NBF and Conensus Economics)

U.S.: An odour of overheating?

The latest U.S. economic indicators confirm what has been our outlook for a few months now: a very strong revival stimulated by highly accommodative monetary and fiscal policies.

We begin our survey with the labour market. Nonfarm payrolls grew 559,000 in May, less than the expected 675,000 but more than the month before, suggesting a slow but steady revival of the labour market in step with reopening of the economy. The sectors most affected by rules of physical distancing – notably leisure/hospitality and education/ health – showed strong gains, as did the private sector as a whole. Long-term unemployment was down for a second straight month, suggesting that some who lost their jobs at the beginning of the pandemic have now rejoined the labour market.

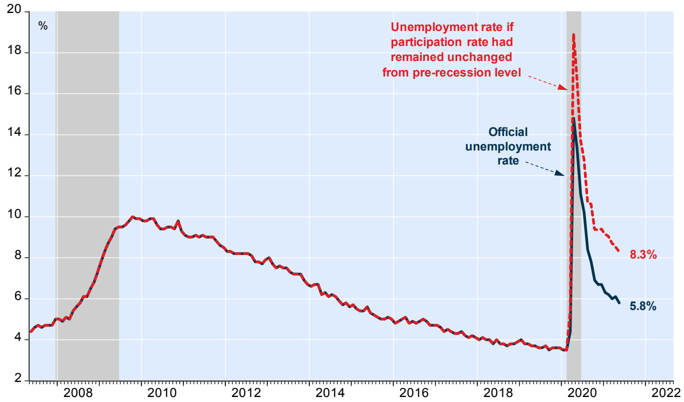
U.S.: Long-term unemployed have begun to rejoin the labour market
Number of workers unemployed for more than 27 weeks



NBF Economics and Strategy (FRED data)

The unemployment rate continued to fall, but that decline needs to be interpreted cautiously because it is due in large part to a substantial drop of the participation rate in recent months. If the participation rate had been the same in May as before the pandemic, the unemployment rate would have been closer to 8.3%.

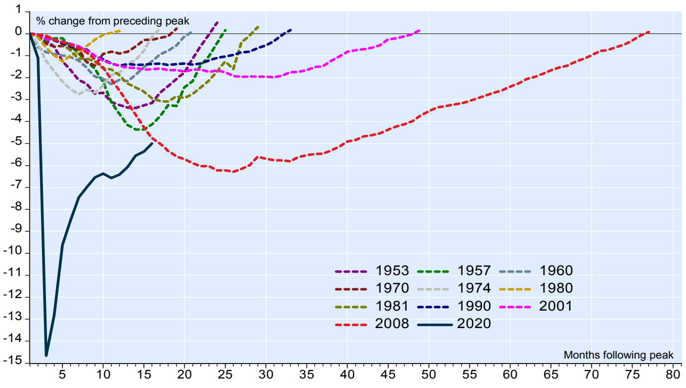
U.S.: Unemployment rate makes the labour market look good
Official unemployment rate vs. unemployment rate with pre-recession participation rate



NBF Economics and Strategy (data from Refinitiv)

So the labour market has a long way to go yet. Employment is still 7.6 million (5.0%) below its pre-recession level. Of the jobs still to be recovered, about 6.8 million are in services, which should revive in step with the progress of mass vaccination.

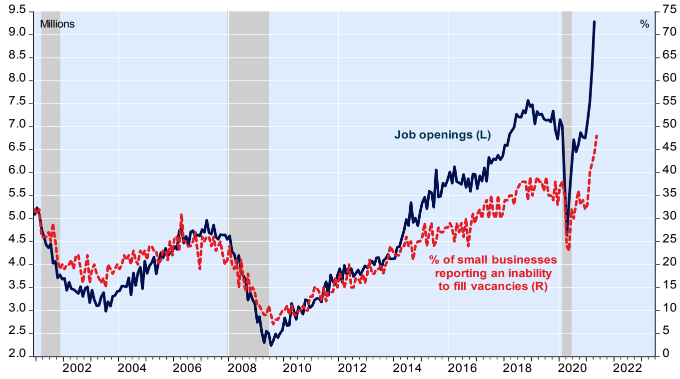
U.S.: Still a long way to go
Nonfarm payroll employment, variations from pre-recession peaks



NBF Economics and Strategy (data from Refinitiv)

On an encouraging note, the relatively weak hiring of the last two months was not due to lack of demand. On the contrary, the JOLTS survey reports a record number of U.S. job openings in April. Potential employers seem to be having trouble finding candidates. No fewer than 48% of small businesses surveyed by the NFIB in May reported they had been unable to fill one or more openings.

U.S.: Weakness in hiring is not due to lack of demand for workers
Job openings vs. % of small businesses reporting difficulty in filling one or more vacancies

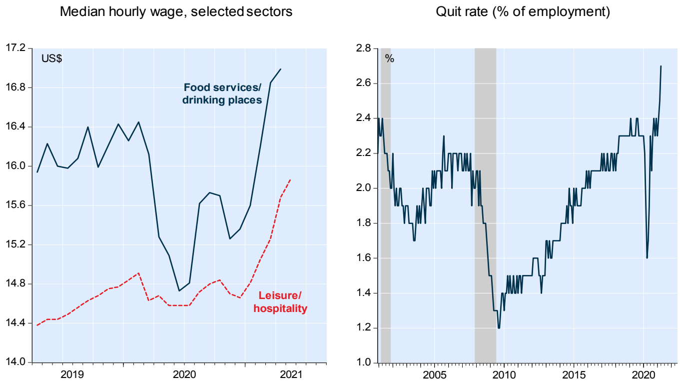


NBF Economics and Strategy (data from Refinitiv and Bloomberg)

How is that possible when so many workers are still on the sidelines? Residual fear of the virus and school closings, of course, oblige some people to stay at home these days. Non-transferability of skills could also be a factor. For the most part, those who were not yet back to work after losing their job during the pandemic had been working in the sectors hit hardest by physical distancing rules. Their skills may not match those needed in industries fully recovered from the recession, where demand for labour is highest at the moment.

In our view, another factor limiting availability of labour is the generosity of benefits from Washington. In sectors where pay is low (and it is these sectors that are reopening at present), government unemployment allowances have a dissuasive effect on return to work, creating what are called "artificial" labour shortages. These could persist until the additional UI benefits are gradually eliminated. This process is already under way in some states and will continue into September in others. Meanwhile, employers could be constrained to raise wages in order to attract workers. This is already the case in some low-income sectors. The quit rate, currently at an all-time high, suggests that this phenomenon could spread.

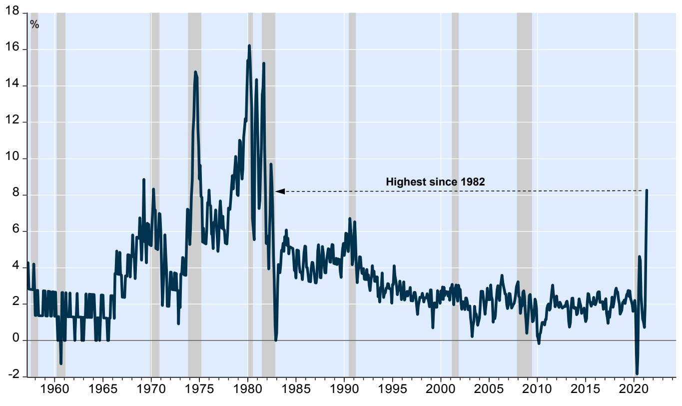
U.S.: Wage increases at a time of labour scarcity



NBF Economics and Strategy (data from Refinitiv)

This potential rise of wages brings us to the second factor attesting to the strength of the U.S. recovery: inflation. In May, headline 12-month CPI inflation was 5.0%, the highest in 13 years. For the CPI excluding food and energy the 12-month rise was 3.8%, the highest since June 1992. Part of the recent acceleration is due to a strongly positive base effect: the CPI of the previous May was depressed by the introduction of public-health restrictions to limit the spread of Covid-19. But the base effect does not explain all. For a better idea of the underlying price movements, we must look at recent momentum. The monthly rise of overall and core prices in May were stronger than expected after very solid rises the month before. The marked rise of motor vehicle prices was one factor in these sharp rises, though many other categories also showed strong advances. The three-month-annualized readings are still more impressive: headline inflation 8.4%, core inflation 8.3%.

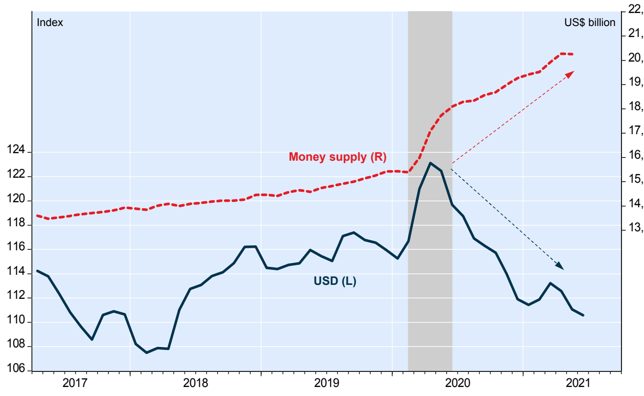
U.S.: Base effect doesn't explain everything (1)
Annualized 3-month change in core CPI



NBF Economics and Strategy (data from Refinitiv)

Will inflation revert back to 2% soon? We doubt it. In our view, a number of factors will continue to drive up prices later this year and early next year. The unprecedented growth of the money supply comes to mind here, as does the weakening of the greenback and Washington's more-than-generous assistance spending.

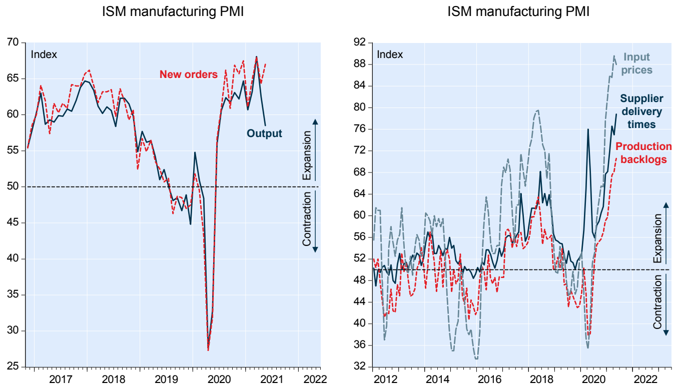
U.S.: Base effect doesn't explain everything (2)
M2 money supply vs. trade-weighted USD



NBF Economics and Strategy (data from Refinitiv)

We doubt producers will be able to meet the extra demand arising from these government programs. Factories were already stretched in May by soaring prices for inputs and lengthening times for their delivery from suppliers. So there is growing pressure on capacity from major supply shortages. Though some of the bottlenecks related to reopening could dissipate fairly quickly, others could affect output over a longer period. Think of global scarcity of microchips now hobbling the auto industry (among others). Production in this sector is controlled by a handful of large players who cannot adapt quickly to higher demand.

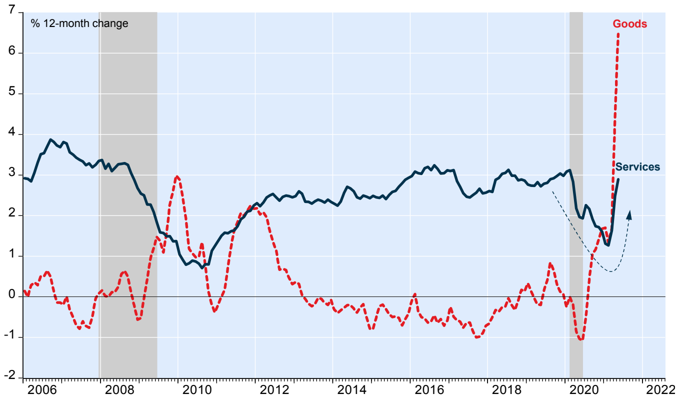
U.S.: Signs of overheating in manufacturing



NBF Economics and Strategy (data from Refinitiv)

Up to now, the bulk of inflationary pressure has come in the goods-producing sector, but inflation could also take off in services if consumers decide, as we think they will, to spend more on activities unavailable in recent months (e.g. restaurant meals and travel). CPI data suggest that such a turnaround is already under way.

U.S.: Will prices now be driven by the service sector?
12-month change in Consumer Price Index excluding food and energy

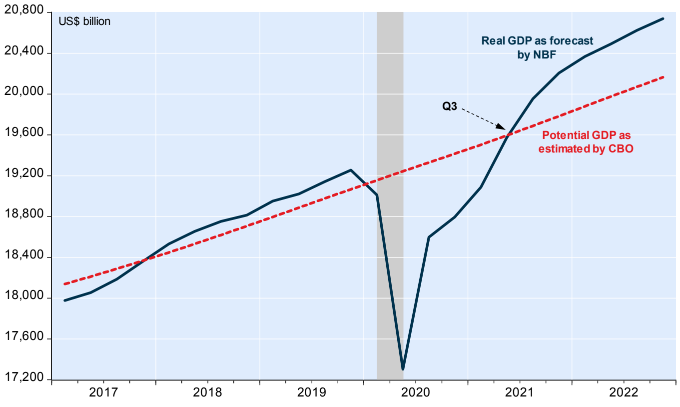


NBF Economics and Strategy (data from Refinitiv)

A larger contribution from services should maintain inflation above 4% for the remainder of the year and keep it above 2.5% in the foreseeable future.

For the U.S. economy as a whole, we left our forecast of 6.9% growth this year unchanged but have increased 2022 growth to 4.3% to reflect further government spending on infrastructure and social programs. In our projections, U.S. real GDP will be back to its potential by the third quarter of this year.

U.S.: GDP back to potential by Q3 2021
Real GDP with NBF forecast and potential GDP as estimated by CBO

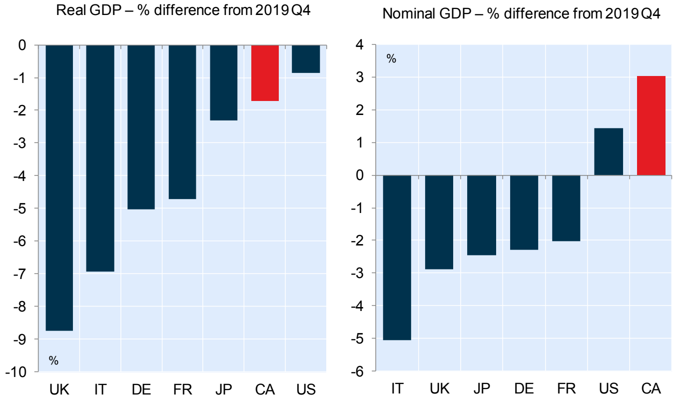


NBF Economics and Strategy (data from CBO)

Canada: Enviable revival

Early in 2021, as the two largest provinces decreed shutdowns of non-essential businesses, public-health conditions seemed to augur little good for the Canadian economy in Q1. And all the other G7 countries except the U.S. did have GDP declines during the quarter. In Canada, however, not only did the contraction that many had apprehended not materialize, but the quarter ended with very solid real growth of 5.6% annualized, a showing that put the Canadian economy in a leading position. In real terms its output came within 1.7% of its peak pre-pandemic quarter (Q4 2019) – second-best in the G7.

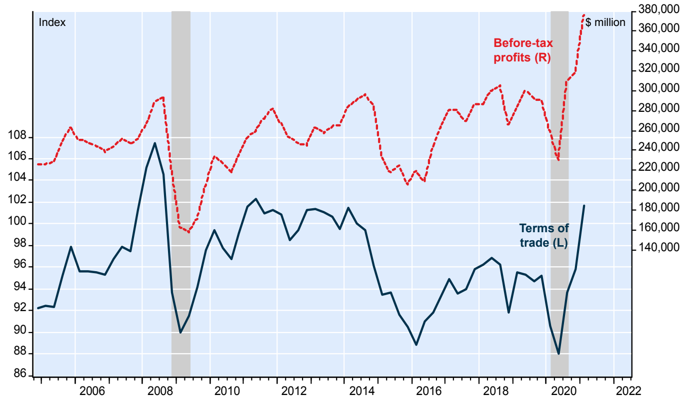
Canada: An enviable recovery
Real and nominal GDP, % difference from pre-pandemic output (2019 Q4)



NBF Economics and Strategy (data from Refinitiv)

In nominal terms the Q1 growth was even more spectacular – 18.4% annualized. This was because the GDP deflator rose the most since 1982. A jump in resource prices contributed to this shift, since terms of trade showed their second-best improvement on record (+6.1%), taking nominal GDP to a best-in-G7 3.0% above its pre-recession peak. Very good news for the financial health of Canadian businesses and governments.

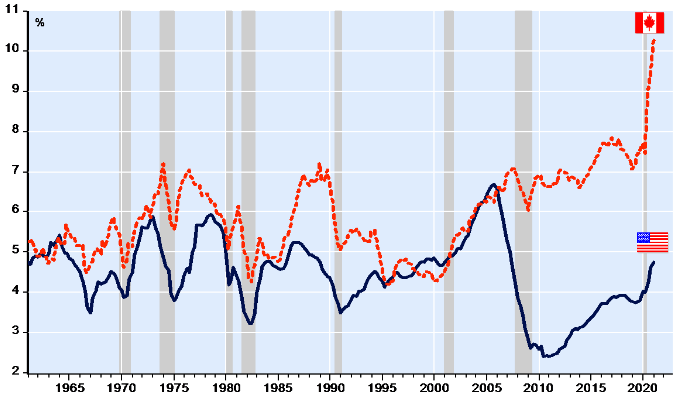
Canada: Best terms of trade in a decade
Before-tax profits and terms of trade



NBF Economics and Strategy (data from Statistics Canada)

But the resource sector was not the only factor in the quarterly advance. Residential investment played a dominant part, contributing 64% of real growth and 33% of nominal growth as new construction, renovation and property-transfer costs all jumped strongly. So much so that the share of residential investment in GDP topped 10%, a record, twice the comparable U.S. share.

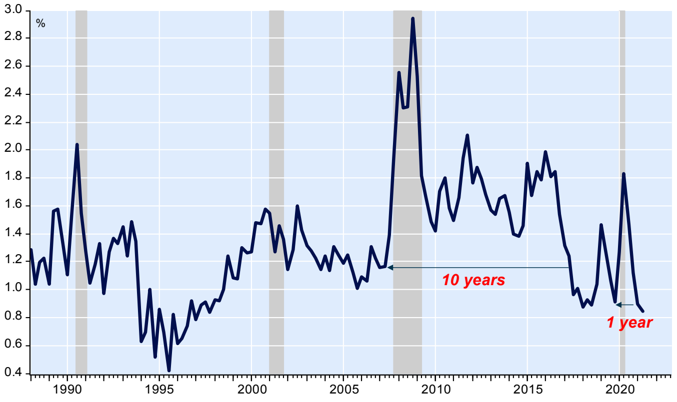
Canada: Homebuilding accounting for an unsustainable share of GDP
Residential construction Investment as % of GDP



NBF Economics and Strategy (data from Statistics Canada)

The overheating of the housing market came partly because the pool of potential buyers was spared job losses in the recession (employment in high-paying sectors was at a record) and the pandemic exacerbated a desire to own property. These conditions, combined with highly accommodative monetary policy, have driven home sales to a volume that has been raising eyebrows and prices (see note). For one thing, 5-year government bond rates remain much lower than before the recession (80 basis points lower than the average of Q4 2019), the central bank is pursuing its quantitative easing, and its prospective guidance indicates no policy-rate hike before the second half of 2022. But in addition, mortgage borrowers are enjoying highly advantageous credit spreads, reflecting a substantial abatement of stress among lenders (and among their creditors in turn). After the financial crisis of 2008-09, it took until 2017 for credit spreads to narrow to their pre-crisis level. This time around they have done so in one year and in the current quarter have shrunk to the narrowest in more than two decades.

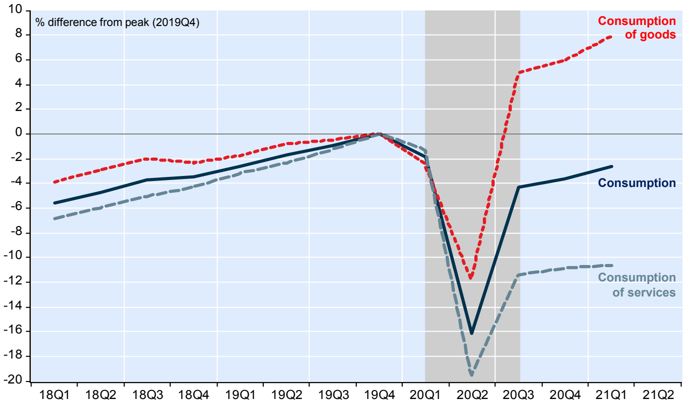
Canada: Mortgage credit spreads at a two-decade low
Mortgage credit spread (5-year mortgage rate - 5-year government bond rate)



NBF Economics and Strategy (data from Statistics Canada)

In other words, transmission of monetary policy is not an issue in this recovery and low mortgage rates are contributing to the overheating of the housing sector. But its Q1 pace seems unsustainable and a return to normal could cool economic growth in the coming quarters. Though its sale volume remains exceptional, it has been showing signs of moderation in the second quarter, with starts and home sales subsiding. The good news is that another part of the economy is ready to pick up the baton. Consumption of services, accounting for 30% of GDP, has remained abnormally low because of public-health measures, but that could change quickly,

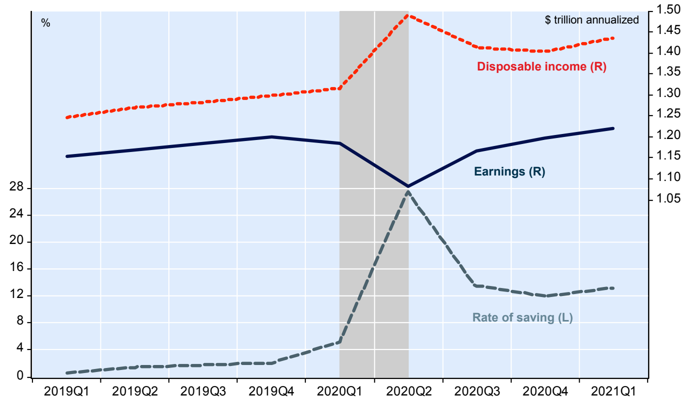
Canada: Unusually low consumption of services
Real consumption



NBF Economics and Strategy (data from Statistics Canada)

The more so in that consumers are in good financial shape to spend strongly in coming quarters. Their disposable income rose in Q1 at an annual rate of 9.5% while consumption rose at only 4.4%. So their rate of saving rose again, topping 10% for the fourth quarter in a row. The rise in the rate of saving meant that in the last five quarters households accumulated excess savings amounting to no less than 9.5% of GDP.

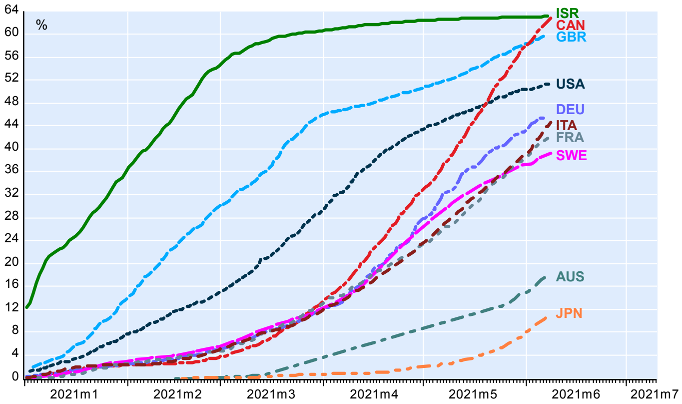
Canada: Extraordinary support of household incomes
Earnings, disposable income and rate of saving



NBF Economics and Strategy (data from Statistics Canada)

As the pandemic slows and public-health restrictions ease, the time is ripe for deployment of these savings. The rollout of vaccination began slowly but then picked up speed. At the beginning of April, Canada was more than 15 percentage points behind the U.S. in share of population vaccinated, but the gap closed quickly as Canadians showed much greater desire to get shots in their arms. The proportion of Canadians vaccinated at least once is now one of the highest in the world.

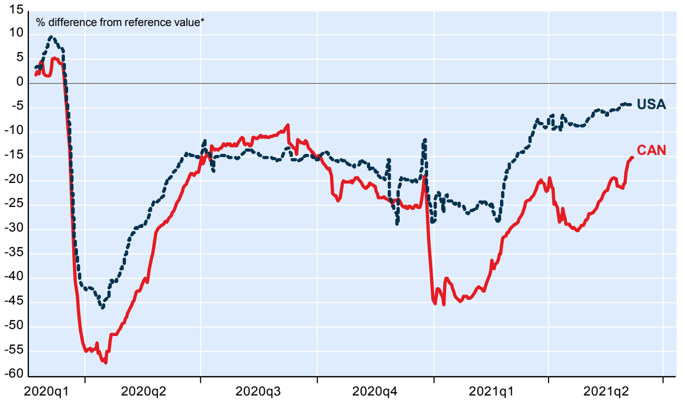
Canada: Up to the head of the pack
% of population vaccinated at least once against Covid-19



NBF Economics and Strategy (data from https://ourworldindata.org/covid-vaccinations)

This month we are keeping our forecast of real growth in 2021 at 6.0%. After a pause in the recovery due to public-health measures and to production backlogs in the auto industry due to microchip shortages, impressive growth can be expected to continue with the reopening of services that entail physical proximity. Canadian mobility index for shops and recreation have resumed its uptrend after a soft patch early in the current quarter and now stands at its highest level since Q3 2020. Our forecast for 2021 growth in nominal terms is now 12.6%, unseen in 40 years.

Canada and U.S.: Return-to-normal index
Google mobility data for shops and recreation, 7-day moving average



* Reference value is the median value from January 3 to February 6 on the same day of the week as the current day
NBF Economics and Strategy (data via Google)

Monthly Economic Monitor

Economics and Strategy

NATIONAL BANK OF CANADA
FINANCIAL MARKETS

United States
Economic Forecast

*(Annual % change)**	*2018*	*2019*	*2020*	*2021*	*2022*	*2020*	*Q4/Q4 2021*	*2022*
Gross domestic product (2012 $)	3.0	2.2	(3.5)	6.9	4.3	(2.4)	7.5	2.6
Consumption	2.7	2.4	(3.9)	8.7	5.0	(2.7)	9.6	3.0
Residential construction	(0.6)	(1.7)	6.1	14.3	(0.9)	14.3	5.6	(3.8)
Business investment	6.9	2.9	(4.0)	8.3	2.7	(1.4)	7.2	1.2
Government expenditures	1.8	2.3	1.1	1.5	1.4	(0.5)	2.7	2.0
Exports	3.0	(0.1)	(12.9)	5.0	6.0	(10.9)	5.0	4.5
Imports	4.1	1.1	(9.3)	11.6	2.8	(0.6)	4.9	1.4
Change in inventories (bil. $)	53.4	48.5	(77.4)	(60.2)	(38.7)	62.1	(18.7)	4.5
Domestic demand	3.0	2.3	(2.7)	7.6	3.8	(1.5)	7.9	2.3
Real disposable income	3.6	2.2	6.0	3.9	(2.1)	3.9	1.7	2.0
Payroll employment	1.6	1.3	(5.7)	2.5	3.4	-6.0	3.9	2.5
Unemployment rate	3.9	3.7	8.1	5.6	4.2	6.8	4.8	3.9
Inflation	2.4	1.8	1.3	3.8	2.9	1.2	4.4	2.6
Before-tax profits	6.1	0.3	(5.8)	14.3	7.0	-0.7	9.4	5.0
Current account (bil. $)	(449.7)	(480.2)	(647.2)	(720.2)	(701.4)	…	...	...

** or as noted*

Financial Forecast**

	Current **6/11/21**	*Q2 2021*	*Q3 2021*	*Q4 2021*	*Q1 2022*	*2020*	*2021*	*2022*
Fed Fund Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
3 month Treasury bills	0.03	0.05	0.05	0.05	0.10	0.09	0.05	0.15
Treasury yield curve								
2-Year	0.16	0.15	0.20	0.25	0.35	0.13	0.25	0.90
5-Year	0.76	0.80	0.95	1.15	1.30	0.36	1.15	1.70
10-Year	1.47	1.50	1.65	1.85	1.95	0.93	1.85	2.20
30-Year	2.15	2.20	2.30	2.40	2.50	1.65	2.40	2.65
Exchange rates								
U.S.$/Euro	1.21	1.21	1.23	1.24	1.22	1.22	1.24	1.21
YEN/U.S.$	110	110	109	108	107	103	108	104

*** end of period*

Quarterly pattern

	Q1 2020 *actual*	*Q2 2020* *actual*	*Q3 2020* *actual*	*Q4 2020* *forecast*	*Q1 2021* *forecast*	*Q2 2021* *forecast*	*Q3 2021* *forecast*	*Q4 2021* *forecast*
Real GDP growth (q/q % chg. saar)	(5.0)	(31.4)	33.4	4.3	6.4	10.6	8.0	5.2
CPI (y/y % chg.)	2.1	0.4	1.3	1.2	1.9	4.6	4.3	4.4
CPI ex. food and energy (y/y % chg.)	2.2	1.3	1.7	1.6	1.4	3.5	3.3	3.5
Unemployment rate (%)	3.8	13.1	8.8	6.8	6.2	5.9	5.4	4.8

National Bank Financial

Monthly Economic Monitor

Economics and Strategy

NATIONAL BANK OF CANADA
FINANCIAL MARKETS

Canada
Economic Forecast

*(Annual % change)**	*2018*	*2019*	*2020*	*2021*	*2022*	*Q4/Q4 2020*	*Q4/Q4 2021*	*Q4/Q4 2022*
Gross domestic product (2012 $)	2.4	1.9	(5.3)	6.0	4.0	(3.1)	5.2	2.9
Consumption	2.5	1.6	(6.0)	5.0	6.2	(4.4)	5.3	5.1
Residential construction	(1.7)	(0.2)	4.1	17.9	(5.1)	14.5	2.7	(4.3)
Business investment	3.1	1.1	(13.6)	0.1	5.7	(13.9)	4.8	4.8
Government expenditures	3.2	1.7	0.4	4.8	1.7	2.4	2.9	1.5
Exports	3.7	1.3	(10.0)	5.9	5.0	(7.4)	5.2	4.7
Imports	3.4	0.4	(11.2)	7.9	5.3	(5.9)	4.8	5.1
Change in inventories (millions $)	15,486	18,766	(15,937)	4,134	13,617	(287)	16,000	13,160
Domestic demand	2.5	1.4	(4.3)	5.6	3.7	(2.0)	4.3	3.1
Real disposable income	1.5	2.2	9.5	(0.0)	(0.6)	7.4	(0.5)	1.1
Employment	1.6	2.2	(5.1)	4.4	2.8	(2.9)	3.2	2.0
Unemployment rate	5.9	5.7	9.6	7.7	6.3	8.8	6.6	6.1
Inflation	2.3	1.9	0.7	2.7	2.5	0.8	3.1	2.3
Before-tax profits	3.8	0.6	(4.0)	33.4	2.2	9.4	16.8	4.0
Current account (bil. $)	(52.2)	(47.4)	(40.1)	5.0	(38.0)	....	....	....

** or as noted*

Financial Forecast**

	Current 6/11/21	*Q2 2021*	*Q3 2021*	*Q4 2021*	*Q1 2022*	*2020*	*2021*	*2022*
Overnight rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.75
3 month T-Bills	0.11	0.10	0.15	0.15	0.20	0.07	0.15	0.70
Treasury yield curve								
2-Year	0.32	0.30	0.35	0.45	0.65	0.20	0.45	1.20
5-Year	0.83	0.85	1.00	1.20	1.35	0.39	1.20	1.80
10-Year	1.37	1.40	1.55	1.75	1.90	0.68	1.75	2.20
30-Year	1.93	1.95	2.05	2.15	2.25	1.21	2.15	2.45
CAD per USD	1.21	1.19	1.17	1.20	1.21	1.27	1.20	1.23
Oil price (WTI), U.S.$	71	66	72	75	70	48	75	65

*** end of period*

Quarterly pattern

	Q1 2020 actual	*Q2 2020 actual*	*Q3 2020 actual*	*Q4 2020 forecast*	*Q1 2021 forecast*	*Q2 2021 forecast*	*Q3 2021 forecast*	*Q4 2021 forecast*
Real GDP growth (q/q % chg. saar)	(7.9)	(38.0)	41.7	9.3	5.6	1.2	7.4	6.6
CPI (y/y % chg.)	1.8	0.0	0.3	0.8	1.4	3.2	3.2	3.1
CPI ex. food and energy (y/y % chg.)	1.8	1.0	0.6	1.1	1.0	2.0	2.3	2.2
Unemployment rate (%)	6.4	13.1	10.1	8.8	8.4	8.2	7.4	6.6

National Bank Financial

Provincial economic forecast

	2018	2019	2020f	2021f	2022f	2018	2019	2020f	2021f	2022f
	Real GDP (% growth)					**Nominal GDP** (% growth)				
Newfoundland & Labrador	-3.5	4.0	-5.3	3.9	2.6	0.8	4.1	-8.3	16.3	3.3
Prince Edward Island	2.5	5.1	-3.0	4.5	4.0	3.6	7.0	-1.0	8.1	5.0
Nova Scotia	1.9	2.4	-3.2	5.0	3.3	3.6	3.8	-1.9	8.0	4.6
New Brunswick	0.5	1.2	-3.7	4.6	3.0	3.6	3.0	-1.9	9.7	4.5
Quebec	2.9	2.7	-5.3	6.5	4.2	5.4	4.3	-4.0	11.9	5.2
Ontario	2.8	2.1	-5.8	6.1	4.2	4.1	3.8	-4.8	10.0	5.1
Manitoba	1.5	0.6	-4.8	5.1	3.5	2.5	1.0	-4.0	11.0	4.9
Saskatchewan	1.2	-0.7	-5.2	5.4	3.5	3.2	0.1	-9.2	17.3	3.7
Alberta	1.9	0.1	-8.2	6.4	4.0	3.4	2.7	-11.6	21.5	5.2
British Columbia	2.7	2.7	-3.8	6.1	4.2	4.9	4.4	-2.3	11.8	5.4
Canada	2.4	1.9	-5.3	6.0	4.0	4.2	3.6	-4.6	12.6	5.0
	Employment (% growth)					**Unemployment rate** (%)				
Newfoundland & Labrador	0.5	1.3	-5.9	3.5	0.4	14.1	12.3	14.2	13.5	12.9
Prince Edward Island	4.2	3.4	-3.2	4.0	2.2	9.4	8.6	10.6	8.2	7.9
Nova Scotia	1.9	2.3	-4.7	5.4	1.6	7.7	7.3	9.8	7.9	7.4
New Brunswick	0.6	0.7	-2.6	3.0	1.2	8.0	8.2	10.1	8.7	8.5
Quebec	1.5	2.0	-4.8	4.4	3.0	5.5	5.2	8.9	6.5	5.6
Ontario	1.7	2.8	-4.7	4.3	3.0	5.7	5.6	9.6	8.0	6.4
Manitoba	1.1	1.0	-3.7	3.2	2.0	6.0	5.4	8.0	6.9	5.8
Saskatchewan	0.6	1.7	-4.6	3.0	2.3	6.2	5.5	8.4	6.6	6.2
Alberta	1.9	0.6	-6.5	4.6	3.3	6.7	7.0	11.5	9.3	7.7
British Columbia	1.4	2.9	-6.5	5.4	2.9	4.8	4.7	9.0	6.9	5.6
Canada	1.6	2.2	-5.1	4.4	2.8	5.9	5.7	9.6	7.7	6.3
	Housing starts (000)					**Consumer Price Index** (% growth)				
Newfoundland & Labrador	1.1	0.9	0.8	1.3	0.8	1.7	1.0	0.2	2.9	2.7
Prince Edward Island	1.1	1.5	1.2	1.1	1.0	2.3	1.2	0.0	2.4	2.5
Nova Scotia	4.8	4.7	4.9	5.0	4.2	2.2	1.6	0.3	2.6	2.5
New Brunswick	2.3	2.9	3.5	3.0	2.8	2.2	1.7	0.2	2.4	2.4
Quebec	46.9	48.0	54.1	70.0	56.0	1.7	2.1	0.8	2.8	2.5
Ontario	78.7	69.0	81.3	92.0	80.0	2.4	1.9	0.6	2.8	2.5
Manitoba	7.4	6.9	7.3	7.3	6.3	2.5	2.3	0.5	2.5	2.6
Saskatchewan	3.6	2.4	3.1	4.5	3.6	2.3	1.7	0.6	2.5	2.4
Alberta	26.1	27.3	24.0	28.0	27.0	2.5	1.7	1.1	2.5	2.4
British Columbia	40.9	44.9	37.7	40.0	36.6	2.7	2.3	0.8	2.7	2.6
Canada	212.8	208.7	217.8	252.2	218.3	2.3	1.9	0.7	2.7	2.5

e: estimate f: forecast

Historical data from Statistics Canada and CMHC, National Bank of Canada's forecast.

Monthly Economic Monitor

Economics and Strategy

NATIONAL BANK OF CANADA
FINANCIAL MARKETS

Economics and Strategy

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General

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RBC
Economics

FINANCIAL MARKET FORECASTS

June 10, 2021

Interest rates (%, end of quarter)

						Forecast									Forecast	
	20Q1	20Q2	20Q3	20Q4	21Q1	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	2019	2020F	2021F	2022F
Canada																
Overnight	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.75	1.75	0.25	0.25	0.75
Three-month	0.21	0.20	0.12	0.06	0.09	0.15	0.20	0.20	0.25	0.25	0.50	0.80	1.66	0.06	0.20	0.80
Two-year	0.42	0.29	0.25	0.20	0.23	0.30	0.40	0.45	0.60	0.75	1.00	1.20	1.70	0.20	0.45	1.20
Five-year	0.59	0.37	0.36	0.39	0.99	1.00	1.15	1.20	1.30	1.40	1.55	1.65	1.69	0.39	1.20	1.65
10-year	0.70	0.53	0.57	0.68	1.56	1.55	1.65	1.70	1.80	1.90	1.95	2.00	1.70	0.68	1.70	2.00
30-year	1.31	0.99	1.11	1.21	1.99	2.10	2.15	2.20	2.30	2.30	2.30	2.30	1.76	1.21	2.20	2.30
Yield curve (10s-2s)	28	24	32	48	133	125	125	125	120	115	95	80	0	48	125	80
United States																
Fed funds*	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.38	0.38	0.63	0.63	1.63	0.13	0.13	0.63
Three-month	0.11	0.16	0.10	0.09	0.03	0.15	0.20	0.25	0.40	0.55	0.70	0.75	1.55	0.09	0.25	0.75
Two-year	0.23	0.16	0.13	0.13	0.16	0.20	0.40	0.60	0.90	1.10	1.30	1.50	1.58	0.13	0.60	1.50
Five-year	0.37	0.29	0.28	0.36	0.92	1.00	1.25	1.45	1.50	1.60	1.70	1.80	1.69	0.36	1.45	1.80
10-year	0.70	0.66	0.69	0.93	1.74	1.80	1.90	2.00	2.05	2.10	2.15	2.20	1.92	0.93	2.00	2.20
30-year	1.35	1.41	1.46	1.65	2.41	2.40	2.45	2.50	2.60	2.60	2.60	2.60	2.39	1.65	2.50	2.60
Yield curve (10s-2s)	47	50	56	80	158	160	150	140	115	100	85	70	34	80	140	70
Yield spreads																
Three-month T-bills	0.10	0.04	0.02	-0.03	0.06	0.00	0.00	-0.05	-0.15	-0.30	-0.20	0.05	0.11	-0.03	-0.05	0.05
Two-year	0.19	0.13	0.12	0.07	0.07	0.10	0.00	-0.15	-0.30	-0.35	-0.30	-0.30	0.12	0.07	-0.15	-0.30
Five-year	0.22	0.08	0.08	0.03	0.07	0.00	-0.10	-0.25	-0.20	-0.20	-0.15	-0.15	0.00	0.03	-0.25	-0.15
10-year	0.00	-0.13	-0.12	-0.25	-0.18	-0.25	-0.25	-0.30	-0.25	-0.20	-0.20	-0.20	-0.22	-0.25	-0.30	-0.20
30-year	-0.04	-0.42	-0.35	-0.44	-0.42	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.63	-0.44	-0.30	-0.30

Note: Interest Rates are end of period rates. * Midpoint of 25 basis point range

Exchange rates (end of quarter)

						Forecast									Forecast	
	20Q1	20Q2	20Q3	20Q4	21Q1	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	2019	2020	2021F	2022F
AUD/USD	0.61	0.69	0.72	0.77	0.76	0.77	0.75	0.74	0.74	0.73	0.73	0.73	0.70	0.77	0.74	0.73
USD/CAD	1.41	1.36	1.33	1.27	1.26	1.20	1.22	1.25	1.26	1.27	1.27	1.27	1.30	1.27	1.25	1.27
EUR/USD	1.10	1.12	1.17	1.22	1.17	1.20	1.17	1.14	1.13	1.12	1.13	1.14	1.12	1.22	1.14	1.14
USD/JPY	107.5	107.9	105.5	103.3	110.7	107.0	103.0	100.0	102.0	104.0	106.0	108.0	108.6	103.3	100.0	108.00
USD/CHF	0.96	0.95	0.92	0.89	0.94	0.92	0.93	0.95	0.96	0.98	0.98	0.98	0.97	0.89	0.95	0.98
GBP/USD	1.24	1.24	1.29	1.37	1.38	1.38	1.31	1.25	1.22	1.19	1.20	1.20	1.33	1.37	1.25	1.20

Scotiabank™

GLOBAL ECONOMICS
| SCOTIABANK'S FORECAST TABLES

June 11, 2021

Supply Challenges Bite

- **No major changes to the outlook for Canada and the United States. Exceptionally strong recovery still expected this year and next.**
- **Supply challenges are temporarily pushing inflation above central bank targets and are increasingly difficult for firms to manage. We think supply will gradually rise to meet demand as the summer progresses, but it may be possible that shortages of goods and materials act as a brake on growth in the interim.**
- **Our rate calls remain unchanged: The Bank of Canada is forecast to raise its policy rate in 2022-Q3, and the Federal Reserve will likely begin tapering in January 2022 before raising interest rates in 2023-Q2.**

There are no material changes to our US and Canada outlook this month. Economic indicators continue to suggest a strong rebound is underway, though Canadian data are muddied by the impact of COVID restrictions in April and May. In the Canadian context, solid progress on the vaccination front and sharp reductions in new infections have led many provinces to announce gradual re-opening plans which suggest that much of the economy will be re-opened by the end of the summer. This should allow a forceful rebound in the sectors that continue to be deeply affected by COVID. This is all contingent, of course, on continued progress in the fight against the virus.

There are three big uncertainties facing the forecast for Canada and the US. How temporary will the current overshoot of inflation be? Associated with that question, will supply rebound fast enough to facilitate the growth in demand we anticipate? Finally, how quickly will labour markets improve?

On inflation, the most recent inflation readings in Canada and the US clearly point to an acceleration in inflation that exceeds inflation targets. We view these exceptional pricing pressures as temporary, as do the Bank of Canada and the Federal Reserve, but believe inflation will slow yet remain sustainably above targets once these impacts pass and output gaps move into excess demand (expected at the end of this year in Canada). In the meantime, shortages of inputs and the consequent increase in their prices are leading to a rapid adjustment in consumer prices. In the US, these price pressures are exacerbated by a high number of job vacancies that are putting upward pressure on wages.

There is not yet compelling evidence that supply challenges are abating. In Canada, for example, the economy-wide inventory-to-sales ratio is at the lowest level since 2014. In relation to sales, retail inventories are at their lowest level ever. In the US, a record share of firms are indicating that backlogs of orders are rising and that customer inventories are too low. And of course, commodity prices continue to suggest that demand exceeds supply in some sectors. We remain comfortable with our view that supply will increase enough to attenuate the temporary and substantial overshoot of inflation targets, but this appears to be a riskier call the more data we get.

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In Canada, labour markets remain deeply affected by the pandemic and associated mobility restrictions. In May, employment was 3% below pre-pandemic levels, as the third wave resulted in a deterioration from the March result, which had pointed to employment being only 1.5% below pre-pandemic levels. The weakness in employment is concentrated in certain industries and types of workers, but we anticipate that employment will rebound strongly in months to come as mobility restrictions are lifted. That is certainly the pattern observed in the previous waves. In the US, nonfarm employment remains stuck at about 5% below pre-pandemic levels despite a record rate of job openings.

There remains a sharp divergence between employment and inflation outcomes in Canada and the US, complicating the task of the Bank of Canada and the Fed. This is particularly so in the US considering the relative underperformance of employment. In view of our growth outlook, we anticipate that labour market outcomes will improve substantially as the year progresses, even as wage growth picks up. Given that, and our forecast that core measures of Canadian inflation will be sustainably at 2% by the third quarter of this year, we still expect the Bank of Canada will raise interest rates in 2022-Q3. The Federal Reserve is forecast to raise interest rates in 2023-Q2 given the lagged employment recovery relative to Canada, but we expect it will begin tapering asset purchases next January. At this point, the upside surprise to inflation suggests that risks to the rate calls appear skewed to the upside, both in terms of timing of the initial move but also the speed at which rates will rise when they do move.

International	2010–19	2019	2020	2021f	2022f	2010–19	2019	2020	2021f	2022f
			Real GDP (annual % change)					Consumer Prices (y/y % change, year-end)		
World (based on purchasing power parity)	3.7	2.8	-3.3	6.2	4.5					
Canada	2.2	1.9	-5.3	6.1	4.0	1.7	2.1	0.8	3.2	2.4
United States	2.3	2.2	-3.5	6.8	4.1	1.7	2.0	1.2	3.9	2.2
Mexico	2.7	-0.2	-8.3	5.3	2.1	4.0	2.8	3.2	4.7	3.6
United Kingdom	1.8	1.4	-9.8	6.1	5.1	2.1	1.3	0.6	1.7	2.0
Eurozone	1.4	1.3	-6.7	4.2	3.9	1.3	1.3	-0.3	1.6	1.3
Germany	2.0	0.6	-5.1	3.5	3.9	1.3	1.5	-0.3	2.2	1.4
France	1.4	1.8	-8.0	5.8	3.8	1.2	1.5	0.0	1.5	1.1
China	7.7	6.0	2.3	8.5	5.9	2.7	4.5	0.2	2.0	2.6
India	7.0	4.7	-7.1	9.3	7.0	6.8	7.4	4.6	4.7	5.3
Japan	1.2	0.0	-4.7	2.7	1.7	0.6	0.8	-1.2	0.8	1.0
South Korea	3.3	2.0	-0.7	3.7	2.7	1.7	0.7	0.5	2.0	2.1
Australia	2.6	1.9	-2.4	4.6	2.1	2.1	1.8	0.9	2.3	2.1
Thailand	3.6	2.3	-6.1	2.8	4.0	1.5	0.9	-0.3	0.8	1.7
Brazil	1.5	1.4	-4.1	4.1	2.8	5.9	4.3	4.5	6.0	4.3
Colombia	3.7	3.3	-6.8	6.0	4.0	3.9	3.8	1.6	3.5	3.0
Peru	4.5	2.2	-11.1	9.9	2.6	2.9	1.9	2.0	3.0	2.6
Chile	3.3	0.9	-5.8	7.5	3.5	2.9	3.0	3.0	3.0	3.0
Argentina	1.4	-2.1	-9.9	4.0	3.1	26.1	53.8	36.1	48.0	37.1
Commodities										
			(annual average)							
WTI Oil (USD/bbl)	74	57	39	59	62					
Brent Oil (USD/bbl)	82	64	43	62	65					
WCS - WTI Discount (USD/bbl)	-18	-14	-12	-13	-15					
Nymex Natural Gas (USD/mmbtu)	3.39	2.53	2.02	2.85	2.70					
Copper (USD/lb)	3.10	2.73	2.80	3.80	4.00					
Zinc (USD/lb)	1.02	1.16	1.03	1.25	1.20					
Nickel (USD/lb)	7.00	6.31	6.25	7.50	7.25					
Iron Ore (USD/tonne)	101	93	109	142	100					
Metallurgical Coal (USD/tonne)	179	185	127	125	140					
Gold, (USD/oz)	1,342	1,393	1,771	1,837	1,850					
Silver, (USD/oz)	21.64	16.21	20.48	28.31	32.00					

Sources: Scotiabank Economics, Statistics Canada, BEA, BLS, IMF, Bloomberg.

North America	**2010–19**	**2019**	**2020**	**2021f**	**2022f**	**2010–19**	**2019**	**2020**	**2021f**	**2022f**
			Canada					**United States**		
			(annual % change, unless noted)					(annual % change, unless noted)		
Real GDP	2.2	1.9	-5.3	6.1	4.0	2.3	2.2	-3.5	6.8	4.1
Consumer spending	2.5	1.7	-5.9	4.5	4.8	2.4	2.4	-3.9	7.7	3.7
Residential investment	2.5	-0.2	4.1	20.6	-3.2	4.4	-1.7	6.1	14.9	3.3
Business investment*	2.6	0.5	-11.9	3.0	4.3	5.0	2.9	-4.0	9.2	4.8
Government	1.2	1.7	0.4	4.8	1.5	0.0	2.3	1.1	2.9	4.3
Exports	3.4	1.3	-10.0	6.0	8.3	3.8	-0.1	-12.9	6.6	6.8
Imports	3.7	0.4	-11.2	6.5	7.3	4.5	1.1	-9.3	14.6	5.8
Inventories, contribution to annual GDP growth	0.1	0.2	-1.7	0.4	0.4	0.2	0.0	-0.7	0.4	0.2
Nominal GDP	4.0	3.6	-4.6	11.5	6.4	4.0	4.0	-2.3	10.0	7.5
GDP deflator	1.7	1.7	0.7	5.1	2.4	1.7	1.8	1.2	3.1	3.3
Consumer price index (CPI)	1.7	1.9	0.7	2.8	2.6	1.8	1.8	1.3	3.8	2.8
Core inflation rate**	2.7	1.9	1.8	2.2	2.4	1.6	1.7	1.4	2.6	2.3
Pre-tax corporate profits	6.3	0.6	-4.0	36.2	5.2	5.2	0.3	-5.8	10.0	4.9
Employment	1.3	2.2	-5.1	4.1	3.3	1.5	1.3	-5.7	2.0	2.9
Unemployment rate (%)	6.9	5.7	9.6	7.6	5.8	6.2	3.7	8.1	5.6	4.0
Current account balance (CAD, USD bn)	-57.0	-47.4	-40.1	14.2	17.8	-411	-480	-647	-846	-876
Merchandise trade balance (CAD, USD bn)	-13.1	-15.4	-37.5	17.7	27.9	-764	-864	-916	-1118	-1184
Federal budget balance (FY, CAD, USD bn) ***	-20.9	-39.4	-354.2	-154.7	-59.7	-830	-984	-3,132	-3,393	-1,508
percent of GDP	-1.2	-1.8	-16.1	-6.3	-2.3	-4.8	-4.6	-15.0	-14.7	-6.1
Housing starts (000s, mn)	201	209	219	257	215	0.99	1.29	1.40	1.58	1.52
Motor vehicle sales (000s, mn)	1,818	1,914	1,564	1,750	1,973	15.7	16.9	14.4	16.5	17.5
Industrial production	2.4	-0.2	-8.3	5.6	4.1	1.7	-0.8	-7.2	6.3	4.2
			Mexico							
			(annual % change)							
Real GDP	2.7	-0.2	-8.3	5.3	2.1					
Consumer price index (year-end)	4.0	2.8	3.2	4.7	3.6					
Current account balance (USD bn)	-19.7	-3.8	26.0	-20.7	-23.9					
Merchandise trade balance (USD bn)	-5.6	5.4	34.0	-9.8	-19.8					

Sources: Scotiabank Economics, Statistics Canada, CMHC, BEA, BLS, Bloomberg. *For Canada it includes capital expenditures by businesses and non-profit institutions. ** US: core PCE deflator; Canada: average of 3 core measures published by the BoC. *** In order to align with US reporting, as of the August 2020 issue of Scotiabank's Forecast Tables, Canadian Federal and Provincial Budget Balances for FY2020/21 are noted in calendar year 2020, FY2021/22 in calendar year 2021.

Quarterly Forecasts	**2019**		**2020**				**2021**				**2022**	
Canada	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1e**	**Q2f**	**Q3f**	**Q4f**	**Q1f**	**Q2f**	**Q3f**	**Q4f**
Real GDP (q/q ann. % change)	0.4	-7.9	-38.0	41.7	9.3	5.6	1.4	9.5	4.4	3.6	2.9	2.3	2.5
Real GDP (y/y % change)	1.7	-0.4	-12.6	-5.1	-3.1	0.3	13.5	6.4	5.2	4.7	5.1	3.3	2.8
Consumer prices (y/y % change)	2.1	1.8	0.0	0.3	0.8	1.4	3.4	3.1	3.2	2.8	2.5	2.5	2.4
CPI-common (y/y % change)*	1.9	1.7	1.4	1.4	1.4	1.4	1.8	1.9	2.0	2.0	2.1	2.2	2.3
Average of new core CPIs (y/y % change)	1.9	1.8	1.7	1.7	1.8	1.8	2.2	2.3	2.3	2.4	2.4	2.5	2.5
CPIXFET (y/y % change)	1.9	1.8	1.0	0.6	1.1	1.0	2.0	2.1	2.2	2.3	2.4	2.4	2.5
Unemployment Rate (%)	5.7	6.4	13.1	10.1	8.8	8.4	8.0	7.3	6.7	6.2	5.9	5.7	5.6
United States													
Real GDP (q/q ann. % change)	2.4	-5.0	-31.4	33.4	4.3	6.4	7.8	9.9	6.6	2.9	1.4	1.3	1.3
Real GDP (y/y % change)	2.3	0.3	-9.0	-2.8	-2.4	0.4	12.4	7.1	7.7	6.8	5.1	3.0	1.7
Consumer prices (y/y % change)	2.0	2.1	0.4	1.3	1.2	1.9	4.7	4.8	3.9	3.5	3.0	2.4	2.2
Total PCE deflator (y/y % change)	1.5	1.7	0.6	1.2	1.2	1.8	3.8	3.8	3.3	3.1	2.7	2.3	2.2
Core PCE deflator (y/y % change)	1.6	1.8	1.0	1.4	1.4	1.6	3.3	2.9	2.6	2.4	2.3	2.3	2.2
Unemployment Rate (%)	3.6	3.8	13.1	8.8	6.8	6.2	5.8	5.4	4.9	4.5	4.1	3.8	3.7

* Refers to BoC's common component of CPI inflation, average of 3 core measures published by the BoC, CPI ex. food, energy and indirect taxes. Sources: Scotiabank Economics, Statistics Canada, BEA, BLS, Bloomberg.

	2019	2020				2021				2022			
Central Bank Rates	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2f**	**Q3f**	**Q4f**	**Q1f**	**Q2f**	**Q3f**	**Q4f**
Americas						(%, end of period)							
Bank of Canada	1.75	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.75
US Federal Reserve (upper bound)	1.75	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Bank of Mexico	7.25	6.50	5.00	4.25	4.25	4.00	4.00	4.00	4.00	4.25	4.75	5.00	5.50
Central Bank of Brazil	4.50	3.75	2.25	2.00	2.00	2.75	4.25	5.75	6.25	6.50	7.00	7.00	7.00
Bank of the Republic of Colombia	4.25	3.75	2.75	1.75	1.75	1.75	1.75	2.00	2.50	3.00	3.50	4.00	4.00
Central Reserve Bank of Peru	2.25	1.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.50
Central Bank of Chile	1.75	0.50	0.50	0.50	0.50	0.50	0.50	0.50	1.00	1.00	1.25	1.50	1.75
Central Bank of Argentina	55.00	38.00	38.00	38.00	38.00	38.00	40.00	44.00	48.00	50.00	50.00	50.00	50.00
Europe													
European Central Bank MRO Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
European Central Bank Deposit Rate	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50
Bank of England	0.75	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Asia/Oceania													
Reserve Bank of Australia	0.75	0.25	0.25	0.25	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Bank of Japan	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
People's Bank of China	4.15	4.05	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
Reserve Bank of India	5.15	4.40	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.25	4.50	4.75	5.00
Bank of Korea	1.25	0.75	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.75	1.00
Bank of Thailand	1.25	0.75	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.75	1.00
Currencies and Interest Rates													
Americas						(end of period)							
Canadian dollar (USDCAD)	1.30	1.41	1.36	1.33	1.27	1.26	1.21	1.20	1.19	1.18	1.18	1.21	1.21
Canadian dollar (CADUSD)	0.77	0.71	0.74	0.75	0.79	0.80	0.83	0.83	0.84	0.85	0.85	0.83	0.83
Mexican peso (USDMXN)	18.93	23.67	22.99	22.11	19.91	20.43	20.00	20.58	20.73	20.84	21.03	21.17	21.25
Brazilian real (USDBRL)	4.02	5.21	5.47	5.61	5.19	5.63	5.07	4.85	4.72	4.67	4.51	4.52	4.56
Colombian peso (USDCOP)	3,287	4,065	3,758	3,828	3,428	3,663	3,753	3,458	3,450	3,438	3,425	3,413	3,400
Peruvian sol (USDPEN)	3.31	3.43	3.54	3.60	3.62	3.74	3.84	3.77	3.65	3.65	3.63	3.62	3.60
Chilean peso (USDCLP)	753	854	821	784	711	719	720	720	720	720	720	710	700
Argentine Peso (USDARS)	59.87	64.40	70.46	76.18	84.15	91.99	95.80	99.70	106.10	108.30	107.20	105.00	101.40
Europe													
Euro (EURUSD)	1.12	1.10	1.12	1.17	1.22	1.17	1.20	1.22	1.23	1.25	1.25	1.24	1.24
UK pound (GBPUSD)	1.33	1.24	1.24	1.29	1.37	1.38	1.43	1.47	1.48	1.49	1.49	1.50	1.50
Asia/Oceania													
Japanese yen (USDJPY)	109	108	108	105	103	111	108	107	106	105	108	110	110
Australian dollar (AUDUSD)	0.70	0.61	0.69	0.72	0.77	0.76	0.78	0.80	0.80	0.79	0.79	0.78	0.78
Chinese yuan (USDCNY)	6.96	7.08	7.01	6.79	6.53	6.55	6.60	6.40	6.40	6.50	6.50	6.60	6.60
Indian rupee (USDINR)	71.4	75.5	75.5	73.8	73.1	73.1	74.0	72.0	72.0	73.0	73.0	74.0	74.0
South Korean won (USDKRW)	1,156	1,219	1,203	1,170	1,086	1,132	1,160	1,120	1,120	1,140	1,140	1,160	1,160
Thai baht (USDTHB)	30.0	32.8	30.9	31.7	30.0	31.3	31.0	30.2	30.2	30.6	30.6	31.0	31.0
Canada (Yields, %)													
3-month T-bill	1.66	0.21	0.20	0.12	0.07	0.09	0.10	0.15	0.15	0.20	0.35	0.60	0.90
2-year Canada	1.69	0.42	0.29	0.25	0.20	0.22	0.35	0.50	0.75	0.90	1.20	1.40	1.65
5-year Canada	1.68	0.58	0.36	0.35	0.39	0.99	0.85	1.20	1.45	1.55	1.60	1.70	1.80
10-year Canada	1.70	0.69	0.53	0.56	0.68	1.56	1.45	1.65	1.80	1.85	1.90	1.95	2.00
30-year Canada	1.76	1.30	0.99	1.11	1.21	1.98	2.00	2.05	2.10	2.10	2.15	2.15	2.15
United States (Yields, %)													
3-month T-bill	1.51	0.05	0.14	0.09	0.08	0.01	0.05	0.10	0.10	0.10	0.10	0.10	0.15
2-year Treasury	1.57	0.25	0.15	0.13	0.12	0.16	0.20	0.40	0.55	0.70	0.90	1.10	1.25
5-year Treasury	1.69	0.38	0.29	0.28	0.36	0.94	0.80	1.05	1.30	1.35	1.45	1.55	1.70
10-year Treasury	1.92	0.67	0.66	0.68	0.91	1.74	1.55	1.80	2.10	2.15	2.20	2.25	2.30
30-year Treasury	2.39	1.32	1.41	1.46	1.64	2.41	2.20	2.30	2.40	2.50	2.55	2.60	2.60

Sources: Scotiabank Economics, Bloomberg.

The Provinces (annual % change except where noted)

Real GDP*	CA	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC
2010–19	2.2	1.0	2.3	1.1	0.7	1.9	2.3	2.1	2.2	2.6	2.8
2019	1.9	4.0	5.1	2.4	1.2	2.7	2.1	0.6	-0.7	0.1	2.7
2020e	-5.3	-5.3	-3.0	-3.2	-3.7	-5.3	-5.8	-4.8	-5.2	-8.2	-3.8
2021f	6.1	3.8	5.0	5.2	5.4	6.9	5.8	5.7	5.5	6.2	6.4
2022f	4.0	2.5	3.2	3.4	3.3	3.8	4.3	3.5	3.6	4.2	4.4
Employment											
2010–19	1.3	0.6	1.5	0.3	0.0	1.2	1.4	0.9	0.8	1.2	2.0
2019	2.2	1.1	3.3	2.3	0.8	2.0	2.8	1.0	1.9	0.7	3.0
2020	-5.1	-5.7	-3.2	-4.7	-2.6	-4.8	-4.8	-3.7	-4.7	-6.6	-6.6
2021f	4.1	3.4	3.3	4.7	4.1	4.3	3.7	3.7	3.3	4.4	5.3
2022f	3.3	1.3	2.5	2.6	2.3	3.2	3.6	3.0	2.9	3.7	3.4
Unemployment Rate (%)											
2010–19	6.9	13.3	10.6	8.7	9.4	7.1	7.0	5.6	5.3	6.2	6.1
2019	5.7	12.3	8.7	7.4	8.1	5.1	5.6	5.3	5.6	7.0	4.7
2020	9.6	14.1	10.4	9.8	10.0	8.9	9.6	8.0	8.4	11.4	8.9
2021f	7.6	12.5	8.3	7.9	8.2	6.3	8.1	6.3	6.2	9.2	6.7
2022f	5.8	12.1	7.4	6.9	7.3	4.9	6.0	4.9	4.9	7.0	4.9
Motor Vehicle Sales (units, 000s)											
2010–19	1,818	33	7	51	41	432	715	55	53	237	194
2019	1,914	34	8	53	41	454	789	53	46	227	214
2020	1,564	28	7	44	34	376	612	46	40	186	180
2021f	1,750	32	9	50	40	425	673	52	45	216	208
2022f	1,973	34	9	55	44	480	764	56	50	244	235
Budget Balances, (CAD mn)											
2019**	-39,400	-1,383	22	3	49	4	-8,672	5	-319	-12,152	-321
2020	-354,200	-1,644	-120	-706	-13	-6,240	-38,468	-2,080	-1,865	-20,192	-8,144
2021f	-154,700	-826	-112	-585	-245	-12,250	-33,100	-1,597	-2,611	-18,221	-9,698
2022f	-59,700	-587	-46	-218	-296	-8,500	-27,700	-374	-1,685	-10,982	-5,484

* Based on preliminary estimates of real GDP by industry for all provinces but Quebec and Ontario. ** NL budget balance in 2019 is net of one-time revenue boost via *Atlantic Accord*.

Sources: Scotiabank Economics, Statistics Canada, CMHC, Budget documents; Quebec budget balance figures are after Generations Fund and Stabilization Reserve transfers.

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TD Economics

Long-Term Economic Forecast

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June 17, 2021

United States

- A pandemic-induced 3.5% contraction in economic growth in 2020 will be more than offset by an impressive 6.9% rebound this year. And, the boost from fiscal policy may not yet be done. It is likely that the Biden administration will enact more spending on infrastructure and other measures, keeping U.S. growth above trend through 2023.
- The pandemic lifted the unemployment rate to an historic level, but it has since made notable progress. Unfortunately, this masks underlying concerns, as a large number of people have dropped out of the labor force. Vaccinations are enabling the reopening of many hard-hit sectors, which should encourage many Americans to rejoin the labor force. Still we expect that above-trend growth will push the unemployment rate below its pre-pandemic low in 2023.
- Labor force growth has also taken a hit from reduced immigration during the pandemic and the implementation of policies under the previous administration. A return of immigration levels to more historical levels is anticipated over the next few years, helping to boost labor force growth over the forecast horizon.
- In the face of the crisis, the FOMC took its policy rate to the zero-lower bound, and enacted substantial monetary stimulus. We expect the FOMC to raise the policy rate in late-2022, and reach 2.0% in mid-2024, where it is expected to remain over the forecast horizon.

Canada

- After overcoming the second wave in resilient fashion, the third wave has proven to be more challenging for the Canadian economy in the second quarter.
- However, as we look to the remainder of the year, impressive vaccination rates across the country, receding COVID-19 cases and hospitalizations, and broad reopening of provincial economies should accelerate the recovery. This will help the economy return to pre-pandemic levels of output in the third quarter and generate 6.1% growth in 2021.
- Strong economic momentum will likely flow through to 2022. GDP growth is anticipated to reach 4.4% as the economy continues to rebuild and is aided by fiscal stimulus from both federal and provincial governments. This will contribute to a continual improvement of the unemployment rate through the year.
- The Bank of Canada has recognized the stronger-than-expected performance of the Canadian economy by recalibrating the quantitative easing program. A successful reopening of the economy along with rising inflation should prompt a further reduction in asset purchases through the year. As for the overnight rate, we expect the Bank will raise rates in the second half of 2022, with a risk of an earlier lift off should inflation and risk-assets remain elevated.

U.S. Economic Outlook

Period-Over-Period Annualized Per Cent Change Unless Otherwise Indicated

Economic Indicator	Annual Average							Fourth Quarter / Fourth Quarter						
	20	21F	22F	23F	24F	25F	26F	20	21F	22F	23F	24F	25F	26F
Real GDP	-3.5	6.9	4.3	2.4	1.8	1.7	1.8	-2.4	7.5	2.7	2.1	1.7	1.7	1.8
Consumer Expenditure	-3.9	8.0	4.1	2.6	2.0	2.0	2.1	-2.7	7.7	3.5	2.3	1.9	2.0	2.1
Durable Goods	6.3	19.9	-0.6	0.7	1.9	2.5	2.8	11.6	10.7	0.6	1.0	2.3	2.7	2.8
Business Investment	-4.0	8.0	5.1	4.5	3.7	3.1	2.6	-1.4	7.2	4.7	4.1	3.6	2.8	2.6
Non-Res. Structures	-11.0	-6.8	1.4	3.7	3.9	3.1	2.2	-16.1	0.0	1.9	4.1	3.7	2.7	2.1
Equipment & IPP*	-2.0	11.9	6.0	4.6	3.7	3.1	2.7	2.8	8.9	5.3	4.1	3.5	2.8	2.7
Residential Investment	6.1	12.6	-2.5	-2.5	0.0	0.7	0.8	14.3	3.1	-4.2	-1.2	0.6	0.6	0.8
Govt. Expenditure	1.1	2.6	1.2	1.0	0.8	0.7	0.8	-0.5	3.9	0.9	0.7	0.9	0.7	0.8
Final Domestic Demand	-2.7	7.2	3.5	2.4	1.9	1.9	1.9	-1.5	6.8	2.9	2.1	1.9	1.9	1.9
Exports	-12.9	6.2	8.0	6.0	4.9	4.1	3.7	-10.9	6.7	7.0	5.5	4.6	3.9	3.7
Imports	-9.3	13.4	5.5	3.7	4.2	4.3	3.9	-0.5	7.8	3.9	3.8	4.4	4.2	3.8
Change in Private Inventories	-77.4	19.1	143.9	105.8	74.3	52.5	50.0	---	---	---	---	---	---	---
Final Sales	-2.9	6.3	3.7	2.6	2.0	1.8	1.8	-2.7	6.6	3.2	2.2	1.8	1.8	1.8
International Current Account Balance ($Bn)	-647	-829	-779	-685	-605	-563	-526	---	---	---	---	---	---	---
% of GDP	-3.1	-3.6	-3.1	-2.6	-2.2	-2.0	-1.8	---	---	---	---	---	---	---
Pre-tax Corporate Profits including IVA&CCA	-5.8	18.6	8.2	2.7	1.6	0.9	2.5	-0.7	16.7	2.6	2.2	1.3	1.4	3.1
% of GDP	10.1	10.8	10.9	10.7	10.5	10.2	10.0	---	---	---	---	---	---	---
GDP Deflator (y/y)	1.2	3.5	2.8	2.2	2.2	2.2	2.2	1.3	4.1	2.4	2.1	2.2	2.2	2.2
Nominal GDP	-2.3	10.7	7.2	4.6	4.0	3.9	4.0	-1.2	11.9	5.2	4.3	4.0	3.9	4.1
Labor Force	-1.7	0.8	1.9	1.1	0.8	0.7	0.7	-2.3	1.9	1.3	1.0	0.7	0.7	0.7
Employment	-5.7	2.7	3.8	1.6	0.7	0.6	0.5	-6.0	4.4	2.7	1.1	0.6	0.6	0.5
Change in Empl. ('000s)	-8,648	3,832	5,611	2,465	1,124	857	850	-9,115	6,325	4,030	1,727	895	881	818
Unemployment Rate (%)	8.1	5.6	3.9	3.5	3.6	3.7	3.8	---	---	---	---	---	---	---
Personal Disp. Income	7.2	6.5	0.3	4.3	4.3	4.4	4.4	5.1	4.3	4.8	4.3	4.4	4.4	4.4
Pers. Savings Rate (%)	16.2	12.7	7.2	6.9	7.2	7.6	7.9	---	---	---	---	---	---	---
Cons. Price Index (y/y)	1.2	3.7	2.6	2.0	1.9	2.0	2.0	1.2	4.0	2.2	1.9	2.0	1.9	2.0
Core CPI (y/y)	1.7	3.1	3.1	2.3	2.2	2.3	2.2	1.6	3.8	2.6	2.2	2.3	2.2	2.2
Core PCE Price Index (y/y)	1.4	3.0	2.8	2.1	2.0	2.0	2.0	1.4	3.7	2.3	2.0	2.0	2.0	2.0
Housing Starts (mns)	1.40	1.59	1.53	1.49	1.47	1.47	1.47	---	---	---	---	---	---	---
Real Output per hour (y/y)**	2.6	3.4	1.0	1.1	1.6	1.5	1.5	2.6	4.0	0.3	1.5	1.6	1.4	1.6

*Intellectual property products. F: Forecast by TD Economics as at June 2021.

**Non-farm business sector.

Source: Bureau of Labor Statistics, Bureau of Economic Analysis, Census Bureau, TD Economics.

Canadian Economic Outlook

Period-Over-Period Annualized Per Cent Change Unless Otherwise Indicated

	Annual Average							4th Quarter / 4th Quarter						
Economic Indicator	**20**	**21F**	**22F**	**23F**	**24F**	**25F**	**26F**	**20**	**21F**	**22F**	**23F**	**24F**	**25F**	**26F**
Real GDP	-5.3	6.1	4.4	1.7	1.5	1.7	1.7	-3.1	5.3	3.2	1.2	1.7	1.7	1.7
Consumer Expenditure	-6.0	4.9	5.7	2.3	1.6	1.6	1.6	-4.4	5.4	3.9	1.7	1.7	1.6	1.6
Durable Goods	-3.3	13.1	0.0	0.9	1.3	1.5	1.5	9.5	0.2	0.8	0.8	1.5	1.5	1.5
Business Investment	-11.9	1.0	8.3	4.7	2.5	2.4	2.5	-11.9	5.6	7.3	3.2	2.4	2.4	2.5
Non-Res. Structures	-11.3	-4.1	9.0	5.5	2.6	2.4	2.5	-18.1	6.1	8.5	3.7	2.4	2.4	2.5
Equipment & IPP*	-12.6	6.3	7.5	3.8	2.5	2.4	2.5	-5.1	5.1	6.1	2.7	2.4	2.4	2.5
Residential Investment	4.1	19.4	-1.0	1.2	1.7	1.8	1.8	14.5	4.4	1.5	1.3	1.8	1.8	1.8
Govt. Expenditure	0.4	6.2	2.8	1.8	1.8	1.8	1.8	2.4	5.0	2.0	1.8	1.8	1.8	1.8
Final Domestic Demand	-4.3	6.1	4.6	2.3	1.8	1.7	1.7	-2.0	5.3	3.5	1.8	1.8	1.7	1.7
Exports	-10.0	6.7	7.4	3.4	2.6	2.6	2.5	-7.4	7.6	5.6	2.6	2.6	2.6	2.5
Imports	-11.2	8.6	9.0	5.4	3.2	2.7	2.7	-5.9	7.5	7.4	4.5	2.7	2.7	2.7
Change in Non-farm Inventories (2012 $Bn)	-17.7	-3.5	2.1	3.2	2.8	2.7	2.7	--	--	--	--	--	--	--
Final Sales	-2.6	5.5	4.3	2.3	1.8	1.8	1.7	-1.4	5.3	3.3	1.9	1.8	1.7	1.7
International Current Account Balance ($Bn)	-40.1	16.5	8.6	-7.7	-11.5	-10.0	-8.7	--	--	--	--	--	--	--
% of GDP	-1.8	0.7	0.3	-0.3	-0.4	-0.3	-0.3	--	--	--	--	--	--	--
Pre-tax Corp. Profits	-4.0	38.4	2.9	1.3	1.5	3.1	3.2	9.4	23.0	2.4	0.9	2.1	3.2	3.2
% of GDP	12.7	15.6	15.0	14.7	14.4	14.3	14.2	--	--	--	--	--	--	--
GDP Deflator (y/y)	0.7	6.2	2.2	1.9	1.9	1.9	2.0	1.8	5.2	1.9	1.9	1.9	2.0	2.0
Nominal GDP	-4.6	12.7	6.7	3.7	3.5	3.7	3.7	-1.2	10.7	5.2	3.1	3.7	3.7	3.7
Labour Force	-1.1	2.2	1.7	0.7	0.6	0.6	0.6	0.3	1.2	1.1	0.5	0.6	0.6	0.6
Employment	-5.1	4.8	3.2	1.0	0.5	0.6	0.6	-2.9	4.0	1.8	0.5	0.6	0.6	0.6
Change in Empl. ('000s)	-975	859	598	188	108	123	125	-556	741	339	106	116	124	126
Unemployment Rate (%)	9.6	7.3	5.9	5.7	5.7	5.7	5.7	--	--	--	--	--	--	--
Personal Disp. Income	10.4	1.4	1.8	3.6	3.5	3.6	3.6	8.1	-0.3	5.4	3.2	3.6	3.6	3.6
Pers. Savings Rate (%)	14.5	10.0	4.2	3.4	3.3	3.3	3.4	--	--	--	--	--	--	--
Cons. Price Index (y/y)	0.7	2.9	2.5	2.2	2.0	2.0	2.0	0.8	3.3	2.3	2.1	2.0	2.0	2.0
CPIX (y/y) **	1.2	2.3	2.7	2.3	2.0	2.0	2.0	1.3	2.7	2.7	2.0	2.0	2.0	2.0
BoC Inflation (y/y) **	1.7	2.2	2.4	2.1	2.0	2.0	2.0	1.7	2.5	2.4	2.0	2.0	2.0	2.0
Housing Starts ('000s)	219	262	214	208	210	212	214	--	--	--	--	--	--	--
Home Prices (y/y)	12.3	19.7	-0.2	0.9	1.2	1.6	1.7	15.6	9.5	0.8	1.0	1.4	1.8	1.7
Real GDP / worker (y/y)	-0.2	1.3	1.2	0.7	1.0	1.0	1.0	-0.1	1.3	1.4	0.6	1.1	1.0	1.0

F: Forecast by TD Economics as at June 2021.
* Intellectual Property Products. ** CPIX: CPI ex. 8 most volatile components. *** BoC Inflation: avg. of CPI-trim, CPI-median, and CPI-common.
Home price measure shown is the CREA Composite Sale Price.
Sources: Statistics Canada, Bank of Canada, CMHC, CREA, TD Economics.

Interest Rate Outlook

Interest Rates	Annual Average							End of Period						
	20	21F	22F	23F	24F	25F	26F	20	21F	22F	23F	24F	25F	26F
U.S. FIXED INCOME														
Fed Funds Target Rate (%)*	0.25	0.25	0.30	1.15	1.95	2.00	2.00	0.25	0.25	0.50	1.50	2.00	2.00	2.00
3-mth T-Bill Rate (%)	0.10	0.05	0.25	1.15	1.85	1.85	1.85	0.09	0.10	0.50	1.50	1.85	1.85	1.85
2-yr Govt. Bond Yield (%)	0.15	0.35	1.10	1.75	1.95	1.95	1.95	0.13	0.60	1.40	1.90	1.95	1.95	1.95
5-yr Govt. Bond Yield (%)	0.35	1.10	1.80	2.10	2.10	2.05	2.05	0.36	1.40	2.00	2.15	2.05	2.05	2.05
10-yr Govt. Bond Yield (%)	0.75	1.80	2.25	2.50	2.45	2.30	2.20	0.93	2.00	2.40	2.50	2.40	2.20	2.20
10-yr-2-yr Govt. Spread (%)	0.60	1.45	1.15	0.75	0.50	0.35	0.25	0.80	1.40	1.00	0.60	0.45	0.25	0.25
CANADIAN FIXED INCOME														
Overnight Target Rate (%)	0.25	0.25	0.30	1.15	1.75	1.75	1.75	0.25	0.25	0.50	1.50	1.75	1.75	1.75
3-mth T-Bill Rate (%)	0.15	0.10	0.35	1.25	1.75	1.75	1.75	0.06	0.15	0.63	1.63	1.75	1.75	1.75
2-yr Govt. Bond Yield (%)	0.30	0.45	1.20	1.75	1.85	1.85	1.85	0.20	0.70	1.45	1.85	1.85	1.85	1.85
5-yr Govt. Bond Yield (%)	0.45	1.10	1.75	2.00	1.95	1.95	1.95	0.39	1.35	1.90	2.00	1.95	1.95	1.95
10-yr Govt. Bond Yield (%)	0.60	1.70	2.25	2.20	2.10	2.10	2.10	0.67	2.00	2.25	2.15	2.10	2.10	2.10
10-yr-2-yr Govt. Spread (%)	0.30	1.25	1.05	0.45	0.25	0.25	0.25	0.47	1.30	0.80	0.30	0.25	0.25	0.25

*Upper bound of target range. F: Forecast by TD Economics as at June 2021.

Annual averages are the average of the four quarterly end-of-period forecasts.

Source: Bank of Canada, Bloomberg, Statistics Canada, TD Economics.

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Foreign Exchange Outlook

Currency	Exchange rate	2020				2021				2022			
		Q1	Q2	Q3	Q4	Q1	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Exchange rate to U.S. dollar													
Euro	USD per EUR	1.10	1.12	1.17	1.22	1.17	1.21	1.22	1.23	1.24	1.25	1.26	1.26
UK pound	USD per GBP	1.25	1.24	1.29	1.37	1.38	1.41	1.41	1.40	1.40	1.40	1.40	1.40
Japanese yen	JPY per USD	108	108	106	103	111	109	106	104	102	102	101	101
Chinese renminbi	CNY per USD	7.08	7.07	6.79	6.53	6.55	6.40	6.45	6.50	6.55	6.60	6.65	6.70
Exchange rate to Canadian dollar													
U.S. dollar	USD per CAD	0.71	0.74	0.75	0.78	0.80	0.83	0.83	0.83	0.82	0.81	0.81	0.80
Euro	CAD per EUR	1.56	1.53	1.56	1.56	1.48	1.46	1.46	1.49	1.51	1.54	1.56	1.58
UK pound	CAD per GBP	1.76	1.68	1.72	1.74	1.73	1.71	1.69	1.69	1.71	1.72	1.74	1.75
Japanese yen	JPY per CAD	76.1	79.2	79.2	80.9	88.0	90.1	88.3	86.0	83.9	82.8	81.8	80.7
Chinese renminbi	CNY per CAD	5.01	5.20	5.10	5.12	5.21	5.29	5.37	5.37	5.37	5.37	5.36	5.36

F: Forecast by TD Economics as at June 2021. All forecasts are end-of-period.

Source: Bloomberg, Bank of Canada, Federal Reserve, TD Economics.

Interest Rate Outlook

Interest Rates	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Canada												
Overnight Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50
3-mth T-Bill Rate	0.21	0.20	0.12	0.06	0.09	0.11	0.13	0.15	0.18	0.20	0.35	0.63
2-yr Govt. Bond Yield	0.42	0.28	0.25	0.20	0.22	0.35	0.50	0.70	0.90	1.10	1.30	1.45
5-yr Govt. Bond Yield	0.60	0.36	0.36	0.39	0.99	0.90	1.15	1.35	1.55	1.70	1.80	1.90
10-yr Govt. Bond Yield	0.71	0.52	0.57	0.67	1.55	1.45	1.80	2.00	2.15	2.25	2.25	2.25
30-yr Govt. Bond Yield	1.30	0.99	1.11	1.21	1.98	2.05	2.30	2.45	2.55	2.55	2.55	2.55
10-yr-2-yr Govt Spread	0.29	0.24	0.32	0.47	1.33	1.10	1.30	1.30	1.25	1.15	0.95	0.80
U.S.												
Fed Funds Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50
3-mth T-Bill Rate	0.11	0.16	0.10	0.09	0.03	0.05	0.10	0.10	0.10	0.10	0.25	0.50
2-yr Govt. Bond Yield	0.23	0.16	0.13	0.13	0.16	0.18	0.40	0.60	0.80	1.00	1.20	1.40
5-yr Govt. Bond Yield	0.37	0.29	0.28	0.36	0.92	0.85	1.15	1.40	1.60	1.75	1.85	2.00
10-yr Govt. Bond Yield	0.70	0.66	0.69	0.93	1.74	1.55	1.90	2.00	2.10	2.20	2.30	2.40
30-yr Govt. Bond Yield	1.35	1.41	1.46	1.65	2.41	2.25	2.45	2.55	2.60	2.65	2.70	2.75
10-yr-2-yr Govt Spread	0.47	0.50	0.56	0.80	1.58	1.37	1.50	1.40	1.30	1.20	1.10	1.00
Canada-U.S. Spreads												
Can - U.S. T-Bill Spread	0.10	0.04	0.02	-0.03	0.06	0.06	0.03	0.05	0.08	0.10	0.10	0.13
Can - U.S. 10-Year Bond Spread	0.01	-0.14	-0.12	-0.26	-0.19	-0.10	-0.10	0.00	0.05	0.05	-0.05	-0.15

F: Forecast by TD Economics as at June 2021. All forecasts are end-of-period.

Source: Bloomberg, Bank of Canada, Federal Reserve, TD Economics.

PUB MFR 16
Export and Domestic Revenues

Current approved Electric Load Forecast and tables that show updates to both the load forecast and the actual loads resulting from the COVID-19 pandemic.

Manitoba Hydro does not have a current approved long term electric load forecast. Short term projections have been prepared for near-term forecast and budgeting purposes and provided in Attachment 1 to this response. PUB MFR 16 – Attachment 1 contains the customer count by class, weather adjusted energy consumption by class and system peak for three historical years ending in 2020/21 along with the projections for 2021/22 and 2022/23. The 2018/19 and 2019/20 fiscal year actuals are provided as reference of pre-pandemic load growth.

	2018/19 W/A Actual	2019/20 W/A Actual	2020/21 W/A Actual	2021/22 Forecast	2022/23 Forecast
Residential	7,609	7,735	8,067	8,019	8,040
GS Mass Market	9,216	9,275	8,856	9,017	9,308
Top Consumers	5,258	5,016	4,762	4,722	4,273
Misc	120	112	131	131	131
General Consumer Sales	22,203	22,138	21,817	21,888	21,752
Losses/Other	2,843	3,103	3,094	2,574	2,506
Gross Firm Energy	25,046	25,240	24,911	24,462	24,257
Gross Total Peak (MW)	4,936	4,715	4,912	4,620	4,603

*W/A= weather adjusted.

Actuals (2018/19 to 2020/21):

Weather adjusted actual Gross Firm Energy saw a reduction in energy consumption from 25,046 GWh in 2018/19 to 24,911 GWh in 2020/21 representing a decrease of 0.3%. Despite seeing customer growth in the General Service Mass Market sector, energy consumption decreased 2.0% in 2020/21 over 2018/19 primarily due to negative impacts relating to the COVID-19 global pandemic. Top Consumers also experienced a decrease of 4.8% in 2020/21 from 2018/19 stemming from planned reductions and other operating reductions due to the pandemic. In contrast, the Residential sector increased 3.0% in 2020/21 compared to 2018/19, due to an overall increase in the number of residential customers coupled with an increase in household consumption as a result of the pandemic with many Manitobans working remotely from home.

COVID-19 Pandemic Impacts:

Starting at the end of March 2020, the global pandemic impacted the energy consumption of Manitoba's major sectors. The state of emergency issued by the Province of Manitoba, coupled with strong recommendations that Manitobans stay at home as much as possible lead to a shift in energy consumption across sectors. Primarily due to COVID-19 pandemic impacts experienced in 2020/21, the General Service Mass Market experienced a decrease of 419 GWh (4.5%) and Top Consumers sectors experienced a decrease of 254 GWh (5.0%) primarily due to forced closures, restrictions applied to the various commercial and industrial sub sectors and global supply chain issues which lead to reduced production levels. These decreases were partially offset by the Residential sector which saw an increase in energy consumption of 332 GWh (4.3%) with many Manitobans working remotely from home and using more electricity for lighting, cooking and electronics than had previously been used.

Quantifying the future impacts of the COVID-19 global pandemic, the General Service Mass Market sector is forecast to see a reduction of 175 GWh in 2021/22 and 42 GWh in 2022/23. These reductions are attributable to the continuance of forced closure, restrictions on capacity levels and hours of operation and lasting negative impacts in various sub sectors such as office buildings, restaurants, retail space, schools/colleges, hotel/motel industries, recreational facilities and churches. Similarly, the Top Consumer sector is forecast to decrease 261 GWh in 2021/22 and 210 GWh in 2022/23 reflective of the ongoing negative impacts of the global pandemic on the Chemical Treatment and Petrol/Oil/Natural Gas sectors. In contrast, the Residential sector is forecast to increase 146 GWh in 2021/22 and 45 GWh in 2022/23 as certain industries opt to continue to operate in a remote work from home environment for the foreseeable future.

2-Year Forecast (2021/22 to 2022/23):

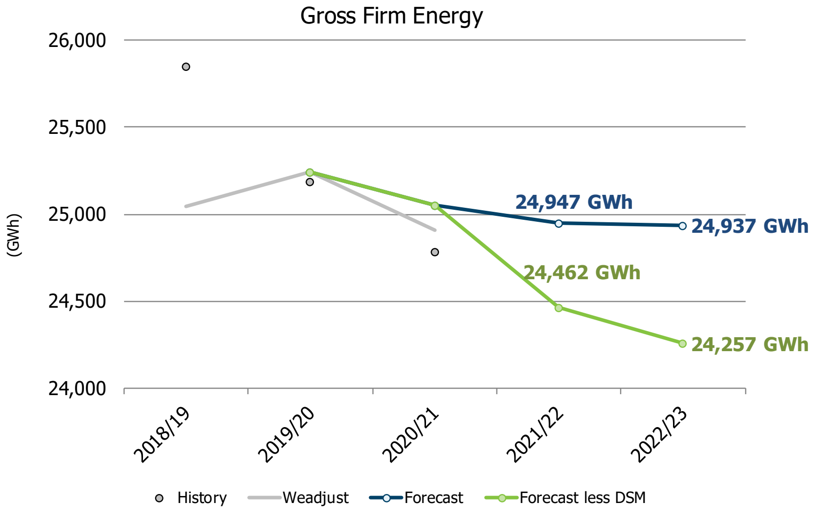
Including future pandemic impacts, the General Service Mass Market sector energy consumption is forecast to increase overall by 160 GWh (1.8%) in 2021/22 over 2020/21 and further increase by 291 GWh in 2022/23 (2.5%) over 2021/22 primarily due to less restrictions and closures forecasted into the future. The Top Consumer sector energy consumption is forecast to decrease overall by 40 GWh (0.8%) in 2021/22 over 2020/21 and further decrease by 449 GWh (5.3%) in 2022/23 over 2021/22 as a result of a pre-pandemic scheduled reduction in the Mining sector. The Residential sector energy consumption is forecast to decrease by 49 GWh (0.6%) in 2021/22 over 2020/21 and but then grow by 21 GWh (0.2%) in 2022/23 over 2021/22 by way of increase in customer growth. Including the lasting impacts of Covid-19 and accounting for regular growth, Gross Firm Energy is forecast to be 24,462 GWh in 2021/22 and 24,257 in 2022/23.

Efficiency Manitoba DSM Savings

Demand Side Management ("DSM") energy and capacity savings are captured by way of Efficiency Manitoba's efforts to affect change in codes & standards and through program-based DSM offerings. The electric load forecast includes future DSM savings associated with existing and future Provincial building codes and improved equipment efficiency standards and regulations (Codes and Standards). Although not explicitly included in this forecast, projected energy and demand savings from program-based offerings are reported in the Load Forecast but are provided under a separate forecast as provided by Efficiency Manitoba.

DSM savings have a significant impact on the projected load growth expected in Manitoba and program-based DSM savings reduces the Gross Firm Energy in 2021/22 from 24,947 GWh to 24,462 GWh, lowering consumption by 485 GWh or 1.9%. Program-based DSM savings reduces the Gross Total Peak in 2021/22 from 4,733 MW to 4,620 MW, lowering peak consumption by 113 MW or 2.4%.

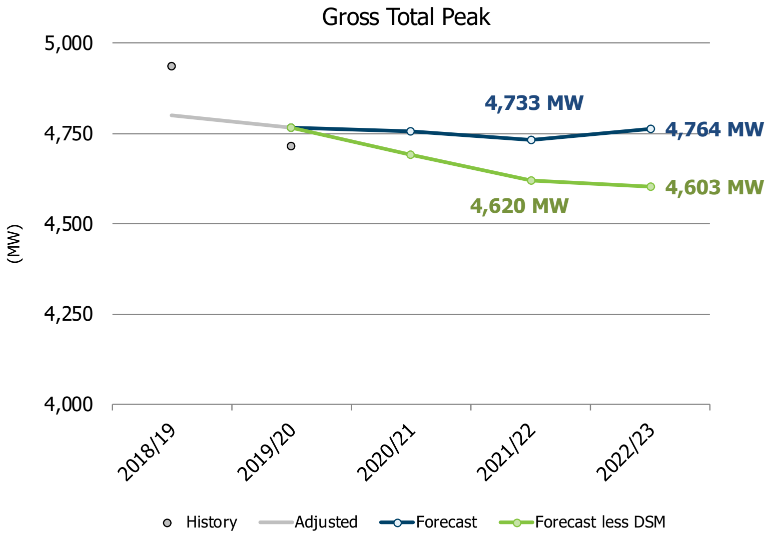
The following charts outline the additional reductions to the electric load forecast resulting from the energy savings attained through program-based DSM offerings by 2021/22:



DSM savings by sector

	2021/22
Residential	55
GS Mass Market	331
Top Consumer	99
Total	**485 GWh**

* DSM savings at generation



DSM savings by sector

	2021/22
Residential	16
GS Mass Market	80
Top Consumer	17
Total	**113 MW**

* DSM savings at generation

Manitoba Hydro
2021/22 Interim Rate Application
Number of Customers by Customer Class

1	Average number of customers in the year	2018/19	2019/20	2020/21	2021/22	2022/23
2		Actual	Actual	Actual	Forecast	Forecast
3						
4	Resdiential					
5	Basic	492,616	498,395	505,045	508,661	514,135
6	Diesel	598	625	649	638	645
7	Seaonal	19,427	19,286	19,041	18,879	18,695
8	Fixed Rate Water Heat	0	0	0	0	0
9						
10	General Service					
11	GS Mass Market					
12	Small Non-Demand	52,887	53,229	53,495	53,648	53,777
13	Small Demand	13,281	13,484	13,760	14,120	14,569
14	Medium Demand	2,116	2,153	2,113	2,007	2,070
15	Large	366	381	396	402	412
16	Top Consumers	26	26	26	26	26
17	Diesel	177	177	181	177	177
18	Seaonal	966	969	981	996	1,010
19	Fixed Rate Water Heat	0	0	0	0	0
20	Surplus Energy Program (SEP)	31	31	31	32	32
21						
22	Area & Roadway Lighting	1,250	1,263	1,276	1,295	1,308
23						
24	**Total General Consumer Customers**	**583,742**	**590,018**	**596,993**	**600,880**	**606,855**

Manitoba Hydro
2021/22 Interim Rate Application
Energy Consumption (GWh) by Customer Class

1	Average number of customers in the year	2018/19	2019/20	2020/21	2021/22	2022/23
2		Weather Adjusted Actuals	Weather Adjusted Actuals	Weather Adjusted Actuals	Forecast *	Forecast *
3						
4	Resdiential					
5	Basic	7,512	7,638	7,967	7,924	7,946
6	Diesel	9	9	10	9	9
7	Seaonal	73	74	76	73	72
8	Fixed Rate Water Heat	15	14	14	13	12
9						
10	General Service					
11	GS Mass Market					
12	Small Non-Demand	1,683	1,697	1,652	1,628	1,632
13	Small Demand	2,086	2,108	2,041	2,136	2,214
14	Medium Demand	3,128	3,077	2,838	2,836	2,928
15	Large	2,319	2,393	2,327	2,417	2,534
16	Top Consumers	5,258	5,016	4,762	4,722	4,273
17	Diesel	6	6	8	6	6
18	Seaonal	5	5	5	5	5
19	Fixed Rate Water Heat	5	5	5	5	5
20	Surplus Energy Program (SEP)	28	28	45	50	50
21						
22	Area & Roadway Lighting	75	68	67	64	64
23						
24	**Total General Consumer Customers**	**22,203**	**22,138**	**21,817**	**21,888**	**21,752**
25						
26	Less Diesel Sales	-15	-15	-18	-15	-15
27	Distribution Losses	1,030	1,286	1,321	1,105	1,125
28	Construction	85	79	63	70	0
29	**Total Common Bus**	**23,302**	**23,487**	**23,182**	**23,048**	**22,861**
30						
31	Transmission Losses	1,644	1,659	1,650	1,340	1,321
32	Less Interruptible	-28	-29	-45	-50	-50
33	**Total Net Firm**	**24,918**	**25,117**	**24,787**	**24,337**	**24,132**
	Station Service	128	123	124	125	125
	Total Gross Firm Energy (GWh)	**25,046**	**25,240**	**24,911**	**24,462**	**24,257**
	Total Gross Peak (MW)**	**4,936**	**4,715**	**4,912**	**4,620**	**4,603**

Note: ** Forecast values include Efficiency Manitoba DSM Savings*

*** Actual Gross Peak provided (not weather adjusted)*

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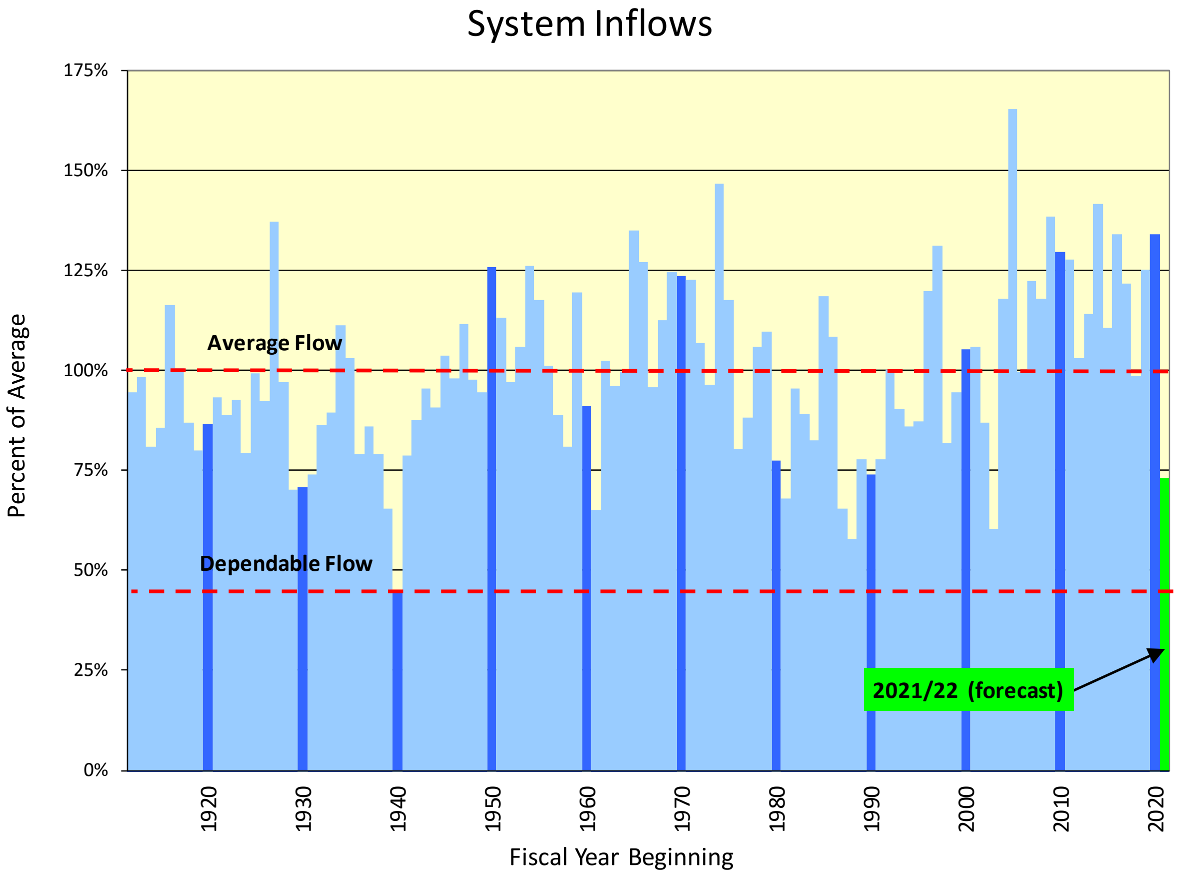
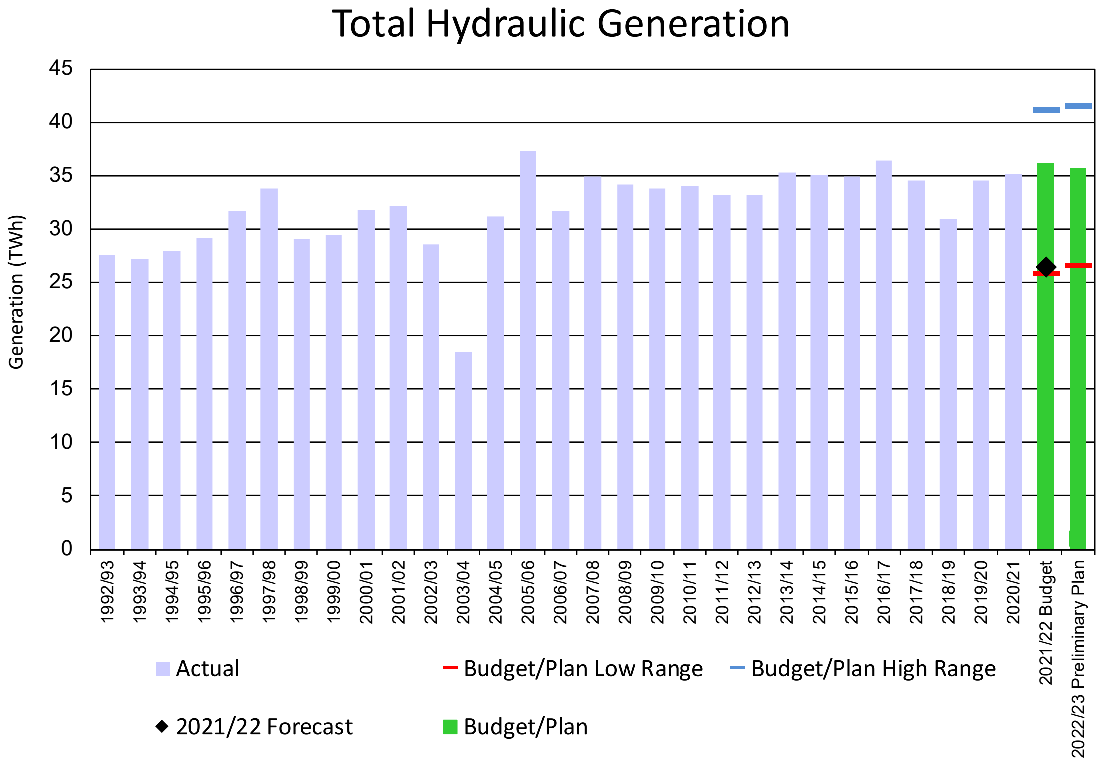
Export and Domestic Revenues

Updates to graphs of Annual System Inflows, Energy in Storage, Daily Hydraulic Energy from Inflow, and Total Hydraulic Generation.

Please refer to Figures 2 & 3 of the Application for updated graphs for the 2020 and 2021 hydraulic energy from inflows compared to average, and energy in storage for the same period compared to average, respectively.

Please see the following graphs.




Total Hydraulic Generation
Generation (TWh)
45
40
35
30
25
20
15
10
5
0
1992/93
1993/94
1994/95
1995/96
1996/97
1997/98
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22 Budget
2022/23 Preliminary Plan
Actual
Budget/Plan Low Range
Budget/Plan High Range
2021/22 Forecast
Budget/Plan

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Export and Domestic Revenues

Graphs and tables of net export revenues and net income for 2021/22 and 2022/23 for each of the possible water flow conditions (P1 to P100). [2019/20 GRA PUB/MH I 29 (c)]

The 2021/22 Forecast of net revenue is based on actual water flow conditions up to October 20, 2021. With the rain season coming to a close there is greater certainty in water conditions affecting inflows for the remainder of the fiscal year therefore the 2021/22 Forecast does not include ranges based on historical water flow records. Please refer to Section 2.1 of the Application for a fulsome discussion of the 2021/22 water flow conditions.

For financial forecasting purposes, Manitoba Hydro assumes current year flow conditions can transition to a range of possible future flow scenarios for 2022/23, based on the recent 40 years of hydrologic record. Use of the more recent record of inflows, which is of greater temporal and spatial resolution as compared to the full long term flow record of 108 years, allows for more detailed modelling of the hydraulic system (including reservoirs upstream of Manitoba), modelling of more recent regulation practices by upstream regulators, and blending of current flow conditions to future scenarios. This is achieved while respecting the chronology of historic hydrology and maintaining storage balancing from the current year to future years.

Use of the 40-year flow record provides a representative range of expected net extraprovincial revenues as it includes droughts (low flow periods 1987-1992 and 2003-2004), average, and high flow periods. Although this record does not include the single most severe drought year (1940/41), the average flow related net extraprovincial revenue for the 108- and 40-year records are very similar (within 2.5% for 2022/23). It is important to emphasize that Manitoba Hydro continues to plan and operate its system to be able to withstand the 1940/41 drought.

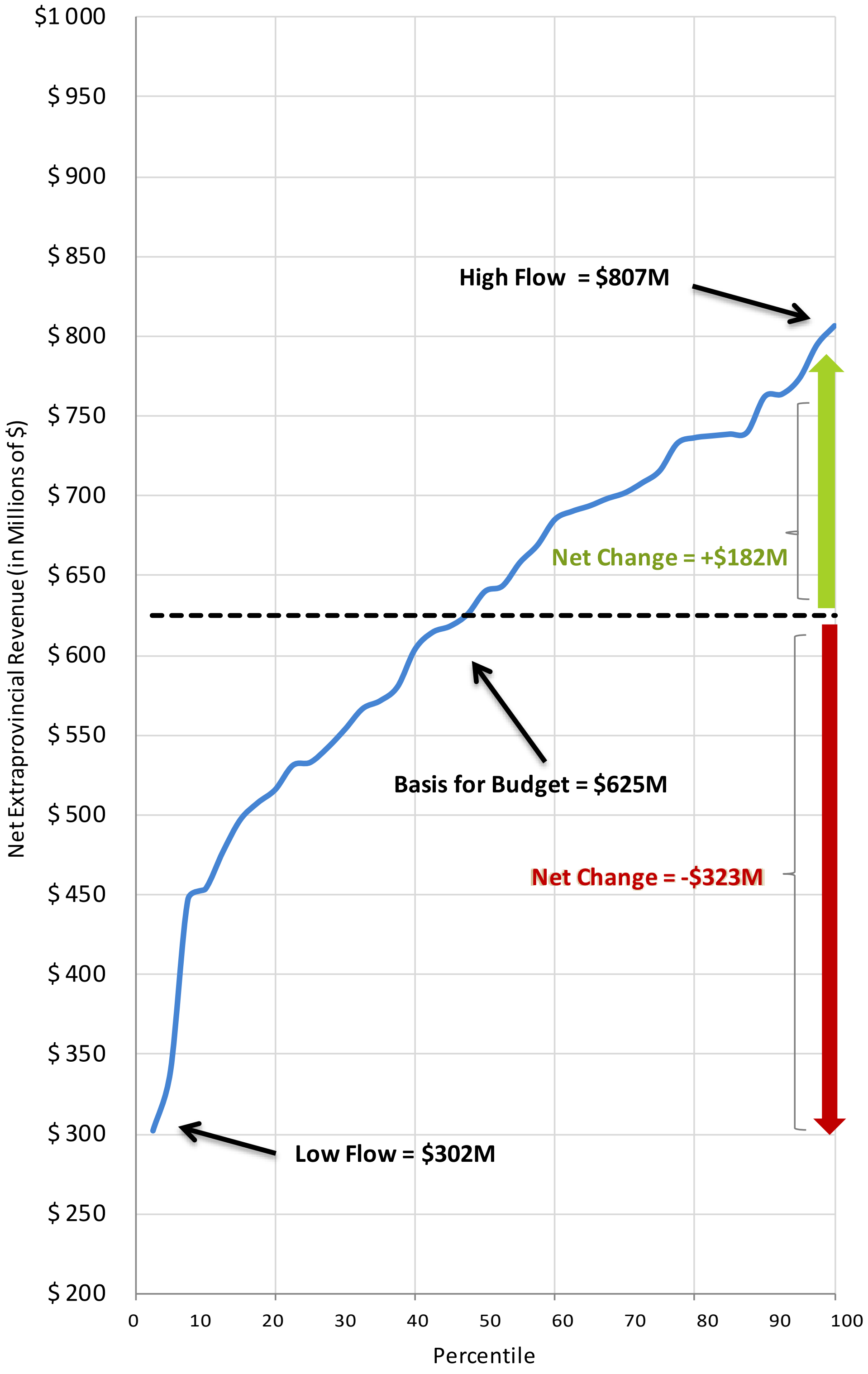
The 2022/23 Preliminary Plan range of net extraprovincial revenues provided in the graph and tables below are based on a full-year (12-month) simulation of the 40-year flow record. The results of the full-year water flow simulation reflect approximately 20% lower than average starting reservoir storage levels in Manitoba Hydro’s major reservoirs based on drought conditions experienced in the 2021/22 Forecast. The average (arithmetic mean) of all 40 flow conditions resulted in net extraprovincial revenue of $625 million and is included in the 2022/23 Preliminary Plan. The table below provides the net extraprovincial revenue, net income, cash surplus/(deficiency) for core business activities, debt ratio, interest as a percentage of revenue and EBITDA interest coverage ratio under each historical water flow year for 2022/23 and the average, sorted from lowest to highest. The results between the P25 and the P75 values have been highlighted. The median net extraprovincial revenue (P50) is $640 million.

The inherent characteristics of Manitoba Hydro's system and historical water flow record result in a net extraprovincial revenue distribution that is not symmetric. This skewed net extraprovincial revenue distribution is a result of on peak imports and possibly thermal generation used when water flows are substantially below average being more expensive than the revenue from additional exports, mostly off peak, realized during water flows substantially above average. Further, in extremely high flow conditions, the finite capacity of Manitoba Hydro's hydraulic units results in water being spilled with no net revenue.

A probability distribution that is symmetrical will have the same median value (P50) and arithmetic mean. As Manitoba Hydro's net revenue is not symmetrically distributed, the median value (P50) does not equal the arithmetic mean. Using the median value (P50) will overstate net revenue over the long run. Therefore, Manitoba Hydro uses the mean and not the median as a planning assumption in order capture the revenue implications of drought and low flow conditions, averaged out over all flow conditions.

In addition to the impacts on net extraprovincial revenue and net income, as requested, Manitoba Hydro is also providing the financial metrics outlined in Section 3.1 of the Application for each flow scenario to assist the PUB in understanding the impacts of water flows on these metrics.

2022/23 Range of Net Extraprovincial Revenues



RANGE OF NET EXTRAPROVINCIAL REVENUE, NET INCOME AND FINANCIAL METRICS FOR 2022/23

#	NET EXTRAPROVINCIAL REVENUE	NET INCOME	CASH SURPLUS/ (DEFICIENCY) FOR CORE BUSINESS ACTIVITIES	DEBT RATIO	INTEREST PAID AS A % OF TOTAL REVENUE	EBITDA INTEREST COVERAGE RATIO
1	302.1	(124.2)	(271.2)	88.8%	40.2%	1.48
2	339.4	(86.8)	(233.8)	88.7%	40.0%	1.51
3	447.2	21.0	(126.1)	88.3%	39.5%	1.62
4	453.7	27.6	(119.4)	88.3%	39.4%	1.62
5	477.1	51.1	(96.0)	88.2%	39.2%	1.64
6	497.2	72.2	(76.0)	88.1%	38.9%	1.66
7	507.9	82.8	(65.4)	88.1%	38.8%	1.67
8	516.1	91.1	(57.1)	88.0%	38.8%	1.68
9	531.3	106.4	(41.9)	88.0%	38.4%	1.70
10	533.1	108.2	(40.0)	88.0%	38.5%	1.70
11	542.4	117.5	(30.7)	87.9%	38.5%	1.71
12	554.1	129.1	(19.1)	87.9%	38.4%	1.72
13	566.9	142.0	(6.3)	87.8%	38.3%	1.73
14	571.8	146.9	(1.4)	87.8%	38.3%	1.73
15	580.7	156.9	9.8	87.8%	37.8%	1.74
16	604.2	179.3	31.1	87.7%	37.8%	1.76
17	614.8	189.8	41.5	87.7%	37.5%	1.77
18	618.6	193.7	45.5	87.7%	37.6%	1.78
AVG	624.6	199.7	51.5	87.6%	37.3%	1.78
19	626.1	201.2	53.0	87.6%	37.4%	1.79
20	640.4	216.6	69.6	87.6%	37.2%	1.80
21	643.8	218.9	70.7	87.6%	37.2%	1.80
22	658.6	233.8	85.5	87.5%	37.1%	1.82
23	669.4	244.6	96.3	87.5%	36.9%	1.83
24	685.5	261.8	114.8	87.4%	36.6%	1.84
25	690.7	267.0	120.0	87.4%	36.6%	1.85
26	694.1	270.4	123.3	87.4%	36.4%	1.85
27	698.6	275.0	127.9	87.4%	36.5%	1.86
28	702.2	278.6	131.5	87.3%	36.4%	1.86
29	708.5	284.8	137.7	87.3%	36.4%	1.87
30	716.1	292.5	145.4	87.3%	36.3%	1.87
31	733.2	309.6	162.6	87.2%	36.0%	1.89
32	736.8	313.1	166.1	87.2%	35.9%	1.89
33	738.0	314.3	167.3	87.2%	35.9%	1.89
34	739.0	315.4	168.4	87.2%	35.9%	1.89
35	740.2	316.6	169.5	87.2%	35.9%	1.90
36	762.5	339.9	191.7	87.1%	35.6%	1.92
37	764.2	341.5	193.3	87.1%	35.6%	1.92
38	774.1	351.5	203.3	87.1%	35.5%	1.93
39	795.1	372.6	224.3	87.0%	35.2%	1.95
40	807.0	384.4	236.2	86.9%	35.1%	1.96

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Capital Expenditures

Capital Expenditure Forecast. If there have been updates since the approved CEF provide a table that shows the updates.

As noted in previous correspondence to the PUB, Manitoba Hydro does not currently have a long-term (20-year) capital expenditure forecast due to the ongoing work on Strategy 2040 initiatives, including the development of an Integrated Resource Plan reflecting Provincial Energy Policy. Manitoba Hydro's current capital expenditure forecast information, which will be submitted to the Treasury Board with Manitoba Hydro's 2022/23 Preliminary Plan, covers the 5-year period from 2021/22 to 2025/26, and provides information on projects with a total value greater than $10 million and programs with an annual spend projection greater than $7 million.

Capital investments are classified as projects or programs. Projects are investments undertaken to add, replace and/or decommission an asset. The investment is planned on an individual basis with a defined beginning and end as well as a pre-defined scope, schedule and budget. Programs are a collection of asset classes requiring renewal that are generally not planned on a specific asset basis, but rather as a fleet. Examples include large populations of inexpensive assets which require annual replacement for sustainability (e.g. wood poles), ongoing fleet life extension works (e.g. cable injection) and run to failure assets such as pole top transformers. Programs also include long term plans of lower value, short lived asset replacements defined within specific spending categories.

Manitoba Hydro has incorporated the use of investment categories, which are commonly used within the industry to provide stakeholders with a better understanding of the primary driver for the investment. The primary investment categories (level 1) are Capacity & Growth, Sustainment and Business Operations Support, and are further broken down into sub-categories (level 2). The definitions of these categories and sub-categories are provided below.

Capacity and Growth

Investments required for the expansion of Manitoba Hydro's generation, transmission, High Voltage Direct Current ("HVDC") systems or distribution assets (electric & gas). Capacity and Growth investments in Business Operations Capital are further broken down and categorized as follows:

- SYSTEM LOAD CAPACITY: Addition of new or upgrades to existing transmission, HVDC or distribution assets for the purpose of increasing the system's capacity to address anticipated load growth not driven by one large customer or to provide increased reliability due to the critical risk of outages on the high voltage system;

• CUSTOMER CONNECTIONS - RESIDENTIAL, COMMERCIAL & INDUSTRIAL: New customer-driven connections for domestic service resulting from residential, commercial and/or industrial customer load.

Sustainment

Investments to sustain the current and future performance capability of Manitoba Hydro's generation, transmission, HVDC, or distribution assets (electric & gas). Sustainment investments are further broken down and categorized as follows:

• SYSTEM RENEWAL: Work performed to either replace, refurbish or remove an existing asset as the asset is approaching or is at the end of its useful life, the existing technology is approaching obsolescence, spare parts are not available, and/or the technology is/will be no longer supported. Includes repairs or replacement of assets due to damage caused by the public.

• SYSTEM EFFICIENCY: Addition of new assets or work performed on existing assets in order to improve the operation of the system. Such enhancements are aimed at reducing costs, minimizing the frequency and duration of outages and/or preventing equipment damage. This may include replacing assets with more modern assets that inherently are more efficient or by appending the existing system(s) with operational technology systems or sensors.

• MANDATED COMPLIANCE: Investments required to address application of legislative, legal, regulatory or corporate policy, Canadian Standard Association requirements, customer requested relocates or to address requests from government or other agencies to relocate Manitoba Hydro assets to accommodate other infrastructure. Does not include application of such regulations or policies on projects that are undertaken due to other drivers.

• DECOMMISSIONING: Expenditures associated with the permanent decommissioning of a Manitoba Hydro generation, transmission, HVDC or distribution assets (electric & gas) along with the effort to return the site to its natural state, excluding site remediation expenditures which are classified as regulated expenditures. The removal of an asset which is preparation for the construction of an asset in its place is categorized within System Renewal.

Business Operations Support

Investments to support business operations and are shared or common throughout the corporation. Business Operations Support investments are further broken down and categorized as follows:

• INFORMATION TECHNOLOGY - Expenditures associated with Information Technology assets for the data centre(s), network connectivity, infrastructure, security and business systems including hardware and printers, software licenses, installation and implementations. This does not include Operational Technology assets.

• FLEET - Expenditures associated with corporate vehicles, mobile equipment and trailers. Primarily includes cars, vans, SUVs, trucks, aerial devices, radial boom diggers, cranes, construction equipment, and all recreation equipment and trailers. These assets typically transport people or goods over land (both on and off road) or water or is a mobile piece of equipment.

• CORPORATE FACILITIES - Expenditures associated with corporate buildings and properties and the required telecommunications (including videoconferencing). Corporate buildings are facilities where the primary function is to house staff or storage of equipment/inventory, and include customer service centers, office buildings, warehouses, storage facilities and vehicle service garages. They do not include buildings which have a direct association with the generation, transmission or distribution of energy.

• TOOLS AND EQUIPMENT - Expenditures on tools and equipment used by maintenance crews and/or field staff while working on maintenance or capital projects. Also includes specialized tools and equipment used by design staff to test apparatus and systems.

• GENERATION BUILDINGS AND GROUNDS – Expenditures associated with site buildings related to generating station assets which are primarily designed for operations, as well as property, fencing, roads, railway spurs, water & sewer, public safety, security, PCB, fire suppression and drainage.

• TOWNSITE INFRASTRUCTURE - Expenditures associated with community infrastructure including staff houses, housing and permanent camps. Costs for infrastructure associated with the first-time construction of new or incremental generation, transmission, HVDC or distribution asset, would typically be included with the corresponding project and not classified as Business Operations Support.

The following tables provide a summary of investments in the 2022/23 Preliminary Plan and specifically identifies projects with a total value of >$10 million and programs with an annual spend projection of >$7 million.

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
<u>**MAJOR CAPITAL**</u>										
Capacity & Growth										
New Energy										
Keeyask	8 726	5 822	1 111	673	648	326	315	316	160	2
System Load Capacity										
Bipole III Reliability	4 609	4 504	70	14	28	20				
Grid Interconnections - Import/ Export										
Manitoba-Minnesota Trans Project	470	124	258	81	22	7				
Birtle Transmission Project	44	6	13	25	21	1				
			271	**106**	**43**	**8**	**-**	**-**	**-**	**-**
MAJOR CAPITAL TOTAL			**1 453**	**793**	**720**	**354**	**315**	**316**	**160**	**2**

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
BUSINESS OPERATIONS CAPITAL										
Sustainment										
System Renewal										
Projects										
HVDC Transformer Sustainment	162	148	11	4	1	0	-	-	-	-
Pine Falls GS Units 1-4 Major Overhauls	86	75	7	3	0	0	-	-	-	-
Adelaide Station - 66/12kV	67	63	3	0	-	1	-	-	-	-
Dorsey Synchronous Condenser Refurbishment	65	59	0	(0)	4	3	3	0	0	-
System Control Centre Replacement - 820 Taylor	47	-	1	2	25	19	24	0	-	-
Limestone Units 1-3 & 5-10 Stator Re-Wedge	37	-	0	1	6	7	6	7	8	7
Kettle Unit 5 Stator Overhaul	29	0	0	1	6	2	10	15	0	-
Transmission Line Protection & Teleprotection Replacement	26	24	0	0	0	1	0	-	-	-
Kettle Unit 6 Stator Overhaul	24	-	-	-	-	-	1	9	15	(1)
Kettle Unit 8 Stator Overhaul	23	-	-	-	-	-	-	-	3	7
Kettle Unit 10 Stator Overhaul	23	-	-	-	-	-	-	3	6	14
Long Spruce Generator Protection Replacement	22	1	1	3	2	4	4	4	3	2
Grand Rapids Unit 4 Overhaul	20	0	0	0	0	2	1	3	5	7
13.2kV Shunt Reactor Replacements	19	13	1	2	2	4	0	-	-	-
HVDC BP2 Valve Hall Wall Bushing Replacement	19	1	1	0	1	0	1	8	7	2
Slave Falls Seven Bay Sluiceway	18	17	0	1	-	0	-	-	-	-
Generation Security Infrastructure Update	16	0	0	1	5	4	5	3	3	-
HVDC - Gapped Arrester Replacement	16	6	1	2	2	4	1	2	1	-
Slave Falls Transformer Banks Replacement	12	1	4	5	2	2	0	-	-	-
Churchill Weir Rehabilitation	11	0	0	0	1	1	3	5	1	-
			31	**25**	**59**	**54**	**59**	**58**	**54**	**38**

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
BUSINESS OPERATIONS CAPITAL										
Sustainment										
System Renewal										
Programs										
Overhead - Pole & Feeder Replacements			9	29	23	26	26	27	27	28
Distribution Modifications - Small Scope			12	13	12	12	12	12	12	13
Lighting - Standard, Base & Cable Replacement			8	5	10	9	10	10	10	10
Overhead - IPM Pole Treatment			8	7	8	8	8	9	9	9
Underground - Cable Replacement			6	6	8	8	8	8	9	9
			42	**61**	**60**	**63**	**64**	**66**	**67**	**69**
Other Projects, Programs & Portfolio Adjustments			169	100	102	108	129	157	187	234
			242	**187**	**221**	**225**	**252**	**282**	**308**	**341**
Mandated Compliance										
Projects										
Public Water Safety/Security	34	14	5	5	6	3	6	-	-	-
Generation North Sewer & Domestic Water System Upgrade	24	20	0	0	2	0	4	-	-	-
Aquatic Data Collection	24	-	-	4	5	5	5	5	5	-
Station PCB Bushing Replacement	16	6	1	2	2	2	3	3	1	-
Transmission Line Upgrades for Improvement Clearance	13	9	0	0	1	1	2	-	-	-
			7	**10**	**17**	**12**	**20**	**7**	**6**	**-**
Other Projects, Programs & Portfolio Adjustments			17	5	8	9	13	15	18	11
			24	**16**	**25**	**21**	**33**	**23**	**24**	**11**

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
BUSINESS OPERATIONS CAPITAL										
Sustainment										
System Efficiency										
Projects										
Station Battery Bank Capacity & System Reliability Increase	45	42	0	0	1	1	2	-	-	-
Other Projects, Programs & Portfolio Adjustments			34	27	40	28	25	31	28	21
			34	**27**	**42**	**29**	**27**	**31**	**28**	**21**
Decommissioning										
Other Projects, Programs & Portfolio Adjustments			0	1	5	4	2	0	0	0
SUSTAINMENT TOTAL			**301**	**230**	**292**	**279**	**314**	**335**	**360**	**374**

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
BUSINESS OPERATIONS CAPITAL										
Capacity & Growth										
System Load Capacity										
Projects										
Portage Area Capacity Enhancement	159	-	0	1	0	4	9	9	34	29
St.Vital-DeSalaberry Transmission Line & DeSalaberry Station	82	12	25	41	0	4	-	-	-	-
De Salaberry-Letellier 230 kV Transmission Line	74	7	1	5	17	37	13	8	2	0
Southwest Winnipeg 115kV Transformer Improvement-Phase2	45	(1)	0	1	17	5	5	32	4	-
Panet Station - 66/24kV	39	18	20	1	0	0	-	-	-	-
Martin Station-New 66-4/12kV Station	34	33	0	1	0	1	-	-	-	-
Laverendrye-St. Vital 230kV Line & Breakers	32	12	1	2	8	2	8	6	0	-
Reenders Station	31	2	11	16	2	2	-	-	-	-
Laverendrye Station 230-66kV Bank Addition	12	0	0	0	7	5	5	2	0	-
Ashern Station Bank Addition	11	1	0	0	3	1	7	1	-	-
Rosser Station 115-66kV Capacity Upgrade	11	0	0	7	5	4	-	-	-	-
Harrow Station Bank Addition	11	5	4	1	-	0	-	-	-	-
			64	**75**	**59**	**64**	**47**	**59**	**39**	**29**
Other Projects, Programs & Portfolio Adjustments			37	34	23	28	31	33	45	49
			101	**109**	**82**	**92**	**78**	**93**	**84**	**78**

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
BUSINESS OPERATIONS CAPITAL										
Capacity & Growth										
Customer Connections										
Programs										
Overhead & Underground Connects - Small Scope			15	15	15	15	16	16	16	16
Commercial Services - Winnipeg			8	9	6	9	9	9	10	10
			23	**24**	**21**	**24**	**25**	**25**	**26**	**26**
Other Projects, Programs & Portfolio Adjustments			28	24	25	24	27	45	49	54
			51	**48**	**46**	**49**	**51**	**70**	**75**	**81**
CAPACITY & GROWTH TOTAL			**152**	**157**	**128**	**141**	**130**	**163**	**159**	**159**
Business Operations Support										
Town site Infrastructure										
Projects										
Gillam Paving and Land Drainage	33	6	8	1	5	6	6	6	-	-
Gillam Water Treatment Plant	32	0	1	14	20	17	0	-	-	-
Gillam Sewer & Water Linear Infrastructure	15	0	5	0	4	4	7	-	-	-
Gillam Apartment Rehabilitation	12	0	5	5	0	3	-	-	-	-
			18	**20**	**29**	**29**	**12**	**6**	**-**	**-**
Other Projects, Programs & Portfolio Adjustments			16	16	2	1	14	11	9	7
			34	**35**	**31**	**30**	**26**	**17**	**9**	**7**

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
BUSINESS OPERATIONS CAPITAL										
Business Operations Support										
Information Technology										
Programs										
Computing Infrastructure			11	7	11	16	11	12	12	17
Emerging Information Technology			3	2	10	5	10	10	10	10
			14	**10**	**20**	**21**	**21**	**21**	**21**	**27**
Other Projects, Programs & Portfolio Adjustments			10	6	4	4	7	6	6	(0)
			24	**16**	**25**	**24**	**27**	**28**	**27**	**26**
Corporate Facilities										
Projects										
Grand Rapids Fish Hatchery Upgrade & Expansion	20	6	1	8	3	5	0	-	-	-
Programs										
Facilities Capital Upgrade			6	4	8	7	8	8	8	8
Other Projects, Programs & Portfolio Adjustments			5	8	9	10	4	5	3	3
			12	**20**	**20**	**22**	**12**	**13**	**11**	**11**

Capital Projects and Programs	Total Project Cost ($M)	LTD Actuals to 2018/19 ($M)	2019/20 Actuals ($M)	2020/21 Actuals ($M)	2021/22 Approved Budget ($M)	2021/22 Forecast ($M)	2022/23 Preliminary Plan ($M)	2023/24 Plan ($M)	2024/25 Plan ($M)	2025/26 Plan ($M)
BUSINESS OPERATIONS CAPITAL										
Business Operations Support										
Fleet										
Programs										
Fleet Acquisitions			16	20	23	23	23	24	24	25
Other Projects, Programs & Portfolio Adjustments			-	-	(0)	(3)	4	7	3	3
			16	**20**	**23**	**20**	**27**	**31**	**28**	**28**
Tools and Equipment										
Other Projects, Programs & Portfolio Adjustments			6	5	7	7	8	10	12	15
BUSINESS OPERATIONS SUPPORT TOTAL			**92**	**95**	**105**	**104**	**101**	**98**	**86**	**86**
BUSINESS OPERATIONS CAPITAL TOTAL			**545**	**482**	**526**	**523**	**545**	**596**	**605**	**619**
MAJOR CAPITAL & BUSINESS OPERATIONS CAPITAL TOTAL			**1 997**	**1 275**	**1 245**	**877**	**860**	**912**	**765**	**621**

PUB MFR 21

COSS and Rate Design

Proofs of Revenue for 2021/22 and 2022/23.

Please refer to Attachment 1 to this response for an annualized Proof of Revenue and Bill Impacts for Fiscal Year 2021/22, and Attachment 2 to this response for an annualized Proof of Revenue for Fiscal Year 2022/23.

PROOF OF REVENUE

December 1, 2020 Rates vs Proposed January 1, 2022 Rates
Annualized for the year April 1, 2021 to March 31, 2022
($000s)

	Calculated Revenue December 1, 2020 Rates	Calculated Revenue Proposed January 1, 2022 Rates	Diff. In Revenue Dollars	Diff. In Revenue Percentage
Basic	766,519	806,365	39,845	5.2%
Diesel	811	853	42	5.2%
Seasonal	8,547	8,992	444	5.2%
FRWH	1,035	1,089	54	5.2%
Residential	$776,913	$817,298	$40,386	5.2%
Small Non-Demand	162,406	168,748	6,341	3.9%
Small Demand	184,408	193,571	9,163	5.0%
Seasonal	723	745	22	3.0%
FRWH	450	468	18	3.9%
GS Small	$347,987	$363,531	$15,544	4.5%
GS Medium	$214,257	$225,498	$11,240	5.2%
Large 750 V - 30 kV	115,868	121,912	6,044	5.2%
Large 30 - 100 kV	96,892	101,926	5,034	5.2%
Large > 100 kV	169,959	178,817	8,858	5.2%
GS Large	$382,720	$402,655	$19,936	5.2%
Diesel GS & Gov.	7,809	7,814	5	0.1%
SEP	1,876	1,876	-	0.0%
General Service	$954,649	$1,001,375	$46,725	4.9%
Area & Roadway Lighting	$27,623	$28,354	$731	2.6%
Misc & Adjs	$8,144	$8,473	$329	4.0%
DOMESTIC REVENUE	**$1,767,329**	**$1,855,500**	**$88,171**	**5.0%**

Customer Bill Impacts

		Customer Bill Rates Effective December 2020	Customer Bill Rates Effective January 2022	Change in Monthly Customer Bill	Percentage Increase
Residential					
kilowatt hours	*Demand*				
250	*n/a*	$31	$33	$1.63	5.2%
750	*n/a*	$76	$80	$3.97	5.2%
1 000	*n/a*	$99	$104	$5.13	5.2%
1 200	*n/a*	$117	$123	$6.06	5.2%
2 000	*n/a*	$189	$198	$9.80	5.2%
5 000	*n/a*	$458	$482	$23.81	5.2%
Residential Diesel					
kilowatt hours	*Demand*				
250	*n/a*	$29	$30	$1.49	5.2%
750	*n/a*	$70	$73	$3.62	5.2%
1 000	*n/a*	$90	$95	$4.68	5.2%
2 000	*n/a*	$172	$181	$8.94	5.2%
5 000	*n/a*	$418	$440	$21.72	5.2%
General Service Small-Non Demand					
kilowatt hours	*Demand*				
750	*n/a*	$90	$93	$2.95	3.3%
2 000	*n/a*	$206	$213	$7.35	3.6%
5 000	*n/a*	$484	$502	$17.91	3.7%
10 000	*n/a*	$947	$982	$35.51	3.7%
20 000	*n/a*	$1,668	$1,755	$87.07	5.2%
General Service Small Demand					
Load factor	*Demand*				
25%	*51 kVA*	$906	$941	$35	3.8%
50%	*51 kVA*	$1,584	$1,665	$80	5.1%
75%	*51 kVA*	$2,009	$2,113	$103	5.1%
100%	*51 kVA*	$2,412	$2,536	$124	5.1%
25%	*100 kVA*	$2,102	$2,211	$109	5.2%
50%	*100 kVA*	$2,923	$3,076	$153	5.2%
75%	*100 kVA*	$3,713	$3,905	$192	5.2%
100%	*100 kVA*	$4,503	$4,735	$232	5.2%
General Service Medium					
Load factor	*Demand*				
25%	*500 kVA*	$9,725	$10,245	$520	5.3%
50%	*500 kVA*	$13,674	$14,393	$719	5.3%
75%	*500 kVA*	$17,623	$18,541	$918	5.2%
100%	*500 kVA*	$21,573	$22,689	$1,116	5.2%
25%	*1,000 kVA*	$19,214	$20,243	$1,029	5.4%
50%	*1,000 kVA*	$27,113	$28,539	$1,426	5.3%
75%	*1,000 kVA*	$35,011	$36,836	$1,825	5.2%
100%	*1,000 kVA*	$42,910	$45,132	$2,222	5.2%
General Service Diesel					
Kilowatt hours	*Demand*				
750	*n/a*	$90.1	$93.1	$3.0	3.3%
2 000	*n/a*	$205.9	$213.3	$7.3	3.6%
5 000	*n/a*	$1,484.4	$1,491.8	$7.3	0.5%
10 000	*n/a*	$3,615.3	$3,622.6	$7.3	0.2%
General Service Diesel Government and First Nation Education					
Kilowatt hours	*Demand*				
750	*n/a*	$1,966	$1,966	$0.31	0.0%
2 000	*n/a*	$5,208	$5,209	$0.31	0.0%
5 000	*n/a*	$12,990	$12,990	$0.31	0.0%
10 000	*n/a*	$25,959	$25,959	$0.31	0.0%

Customer Bill Impacts

		Customer Bill Rates Effective December 2020	Customer Bill Rates Effective January 2022	Change in Monthly Customer Bill	Percentage Increase
General Service Large - 750 V to 30 kV					
Load factor	*Demand*				
25%	*5,000 kVA*	$84,043	$88,428	$4,385	5.2%
50%	*5,000 kVA*	$121,136	$127,455	$6,319	5.2%
75%	*5,000 kVA*	$158,229	$166,483	$8,254	5.2%
100%	*5,000 kVA*	$195,323	$205,511	$10,188	5.2%
General Service Large - 30 kV to 100 kV					
Load factor	*Demand*				
25%	*10,000 kVA*	$147,855	$155,514	$7,659	5.2%
50%	*10,000 kVA*	$216,110	$227,328	$11,218	5.2%
75%	*10,000 kVA*	$284,365	$299,141	$14,776	5.2%
100%	*10,000 kVA*	$352,620	$370,955	$18,335	5.2%
General Service Large - Over 100 kV					
Load factor	*Demand*				
25%	*50,000 kVA*	$685,555	$721,301	$35,746	5.2%
50%	*50,000 kVA*	$1,016,610	$1,069,603	$52,993	5.2%
75%	*50,000 kVA*	$1,347,665	$1,417,904	$70,239	5.2%
100%	*50,000 kVA*	$1,678,720	$1,766,205	$87,485	5.2%
Limited Use Billing Demand - General Service Small					
Load factor	*Demand*				
5%	*100 kVA*	$562	$591	$29	5.1%
10%	*100 kVA*	$954	$1,003	$49	5.2%
15%	*100 kVA*	$1,345	$1,415	$70	5.2%
20%	*100 kVA*	$1,737	$1,826	$90	5.2%
Limited Use Billing Demand - General Service Medium					
Load factor	*Demand*				
5%	*500kVA*	$3,236	$3,402	$166	5.1%
10%	*500kVA*	$5,193	$5,461	$268	5.2%
15%	*500kVA*	$7,150	$7,520	$370	5.2%
20%	*500kVA*	$9,107	$9,579	$472	5.2%
Limited Use Billing Demand - General Service Large - 750 V to 30 kV					
Load factor	*Demand*				
5%	*5,000 kVA*	$29,062	$30,564	$1,502	5.2%
10%	*5,000 kVA*	$46,374	$48,777	$2,403	5.2%
15%	*5,000 kVA*	$63,686	$66,991	$3,305	5.2%
20%	*5,000 kVA*	$80,998	$85,204	$4,206	5.2%
Limited Use Billing Demand - General Service Large - 30 kV to 100 kV					
Load factor	*Demand*				
5%	*10,000 kVA*	$50,372	$52,996	$2,624	5.2%
10%	*10,000 kVA*	$80,784	$84,992	$4,208	5.2%
15%	*10,000 kVA*	$111,195	$116,988	$5,792	5.2%
20%	*10,000 kVA*	$141,607	$148,984	$7,376	5.2%
Limited Use Billing Demand - General Service Large - Over 100 kV					
Load factor	*Demand*				
5%	*50,000 kVA*	$229,408	$241,245	$11,837	5.2%
10%	*50,000 kVA*	$370,317	$389,490	$19,173	5.2%
15%	*50,000 kVA*	$511,225	$537,734	$26,510	5.2%
20%	*50,000 kVA*	$652,133	$685,979	$33,846	5.2%

PROOF OF REVENUE

Proposed January 1, 2022 Rates vs Proposed January 1, 2023 Rates
Annualized for the year April 1, 2022 to March 31, 2023
($000s)

	Calculated Revenue Proposed January 1, 2022 Rates	Calculated Revenue Proposed January 1, 2023 Rates	Diff. In Revenue Dollars	Diff. In Revenue Percentage
Basic	809,111	809,111	-	0.0%
Diesel	861	861	-	0.0%
Seasonal	8,917	8,917	-	0.0%
FRWH	1,035	1,035	-	0.0%
Residential	$819,924	$819,924	$-	0.0%
Small Non-Demand	169,190	169,190	-	0.0%
Small Demand	200,374	200,374	-	0.0%
Seasonal	754	754	-	0.0%
FRWH	454	454	-	0.0%
GS Small	$370,772	$370,772	$-	0.0%
GS Medium	$232,791	$232,791	$-	0.0%
Large 750 V - 30 kV	127,814	127,814	-	0.0%
Large 30 - 100 kV	104,675	104,675	-	0.0%
Large > 100 kV	154,976	154,976	-	0.0%
GS Large	$387,465	$387,465	$-	0.0%
Diesel GS & Gov.	7,826	7,826	-	0.0%
SEP	1,876	1,876	-	0.0%
General Service	$1,000,731	$1,000,731	$-	0.0%
Area & Roadway Lighting	$28,502	$28,502	$-	0.0%
Misc & Adjs	$8,316	$8,316	$-	0.0%
DOMESTIC REVENUE	**$1,857,472**	**$1,857,472**	**$-**	**0.0%**

COALITION MFR 22

Corporate

Please provide a detailed explanation of how MH plans to revise its strategic actions for 2021/22 and 2022/23 to reduce the deleterious impacts of drought (ie - preserving cash flow, minimizing additional debt, maximizing revenues and minimizing expenses, etc) including:

a) **Potential deferrals or repriorizations of capital expenditures in the event of financial distress due to drought (i.e., regardless of the existing plan, what is the contingency plan to minimize capex to what is critically necessary);**
b) **Potential O, M and A and other cost reductions that could be implemented in the event of financial distress (see above); and**
c) **Potential adjustments to corporate strategies such as alternate debt management strategies and strategies to maximize domestic and net export revenues before asking for rate increases.**

a) Manitoba Hydro's fleet of assets is aging, and sustained capital expenditures are essential to keep the reliability and safety of the system at acceptable levels, as aging infrastructure continues to be a top risk for the corporation. Manitoba Hydro has a rigorous process to prioritize and optimize capital expenditures to sustain our assets based on value (in the areas of Financial, Reliability, Safety, Environment and Corporate Citizenship). Investment is allocated to the areas where there is the greatest risk mitigated or benefit to be gained. Deferring investments will generally erode value by increasing risks associated with the aging assets, increasing costs associated with remediation of those risks, decreasing asset reliability, or some combination of the three. These impacts of deferral will ultimately negatively impact customers through decreased reliability and/or increased costs for Manitoba Hydro that will need to be passed on to customers.

Increasing spend on projects during a drought will be an opportunity in some cases. For example, where there is not enough water flowing to operate a generator and it is sitting idle, work can be done on that unit as there is no 'lost generation cost' of the outage.

b) From 2016/17 through to 2022/23, Manitoba Hydro's electric O&A expenditures have seen a compounded annual growth of 2.37%, which is lower than the 2.75% compounded annual growth for CPI during that same time period.

(in millions of $)	2016/17 (Pre-VDP) Actual	2017/18 (VDP Beginning) Actual	2018/19 (VDP Complete) Actual	2019/20 (Pre-Pandemic) Actual	2020/21 (Pandemic/Cost Savings) Actual	2021/22 Forecast	2022/23 Preliminary Plan
O&A - electric	536	517	508	512	534	557	595

This relatively low annual growth is a result of Manitoba Hydro making significant O&A cost reductions over the past number of years, despite the fact that there have been increased costs that have been out of Manitoba Hydro's control.

O&A cost reductions have included: a workforce reduction through the Voluntary Departure Program ("VDP") in 2017/18; as well as the cost savings initiative in which the provincial government required that Manitoba Hydro contribute to financial and workforce reductions in response to the COVID-19 pandemic in 2020/21 (as outlined in PUB MFR 12).

Uncontrollable O&A expenditures were a result of the unprecedented storm in October 2019 and incremental expenditures due to the pandemic. In addition, with the winding down of major capital projects, O&A costs are going up as there is a shift from resources working on construction activities, focused on large hydro-electric and transmission line development, to operating activities in support of Strategy 2040 and building up the capability to meet the evolving energy landscape.

Full Time Equivalents ("FTEs") are currently at the lowest levels seen since before the purchase of Winnipeg Hydro in 2002; however, this level of FTEs is not sustainable. Manitoba Hydro currently has an external hiring plan in place to return to pre-pandemic FTE levels which will allow Manitoba Hydro to ensure that it can continue to provide safe and reliable service to its customers.

	2016/17 (Pre-VDP) Actual	**2017/18 (VDP Beginning) Actual**	**2018/19 (VDP Complete) Actual**	**2019/20 (Pre-Pandemic) Actual**	**2020/21 (Pandemic/Cost Savings) Actual**	**2021/22 Forecast**	**2022/23 Preliminary Plan**
Corporate FTE	6,411	5,998	5,475	5,391	4,953	5,022	5,420

c) Manitoba Hydro's fundamental debt management objective is to provide stable, low cost funding to meet the financial obligations and liquidity needs of the Corporation, while maintaining risk at prudent levels and reserving sufficient flexibility to adapt to changing circumstances.

Manitoba Hydro has made some slight shifts from the forecast term to maturity of new debt issuance for fiscal 2021/22, issuing debt with a weighted average term to maturity ("WATM") of 15.4 years at a weighted average interest rate ("WAIR") of 2.09% year to date (versus a WATM of 37.2 years and a WAIR of 2.15% in 2020/21). This strategy has benefited finance expense, as rates across the yield curve have risen above forecasted levels year to date in 2021/22.

There are risks to employing short term cost conservation techniques. With respect to shortening the term to maturity of long term debt issuance, this adds refinancing risk in the debt profile earlier than planned. Given the extended WATM of 37.2 years in the 2020/21 fiscal year, Manitoba Hydro is comfortable with slightly shortening the WATM in 2021/22.

Decreasing the level of pre-funding to reduce the associated cost to carry would provide some short term cost conservation; however, it would also introduce liquidity risk and reduce flexibility for timing of new debt issuances. Manitoba Hydro risks being forced into accepting price and terms from financial markets in a “just-in-time” funding scenario in order to meet cash requirements rather than having the flexibility to choose the timing to align debt issuance with the debt management objective.

Increasing the floating rate debt as a percentage in the debt portfolio, including swapping fixed rate long term debt to floating rate debt may result in cost savings in the short term in a typical upward sloping yield curve; however, this introduces interest rate risk (there would be savings in the front years, however at the time of transaction – either debt issuance or swap - the expectation is to be economically indifferent between fixed and floating rate debt of the same term to maturity). Given the current economic environment where inflation is running high and current forecasts are showing short term rates will be rising in the next fiscal year and beyond, Manitoba Hydro has chosen not to employ the strategy of increasing floating rate debt and risk the related rising finance expense in the near term. Manitoba Hydro is, however, anticipating issuance of a small amount of commercial paper. It should be noted that the increased limit of $1.5 billion for the commercial paper program has not been approved for use, nor guaranteed as of yet, by the Province of Manitoba.

Please see Section 2.2 of the Application which details the price risk mitigation activities undertaken to date by Manitoba Hydro to maximize net extraprovincial revenues. Manitoba Hydro continues to pursue hedging opportunities as market opportunities present themselves to further reduce price risk.

COALITION MFR 23

Financial Results and Forecasts

An explanation of the financial metrics Manitoba Hydro used to determine the level of proposed interim rate increase and how the assessment of these financial metric resulted in the rate relief sought in the interim rate application

Please see Section 3.1 of the Application for a discussion of the metrics considered by Manitoba Hydro in determining the level of rate increase requested in this Application. However, as set out in Section 1.3 of the Application, this interim rate application is driven by deterioration of the Corporation’s financial health caused by the current drought conditions and upward pressures on Manitoba Hydro’s revenue requirement associated with several major capital projects being placed in-service. Manitoba Hydro’s rate relief sought in this interim application aims to limit further deterioration of the Corporation’s financial health, although as noted in Section 1.3 and 3.1, even if the application is approved, Manitoba Hydro’s equity ratio is expected to worsen to 87% in 2021/22 and 88% in 2022/23. As discussed in Section 2.4 of the Application, the 2022/23 Preliminary Plan, assumes there is an equal probability of transitioning to any one of 40 historic inflow years in 2022/23 as hydraulic generation is highly dependent on Spring and Summer rainfall. However, there is an elevated likelihood of below average inflows occurring in 2022/23, which could lead to further deterioration in Manitoba Hydro’s financial health.

COALITION MFR 24

Financial Results and Forecasts

A detailed description of how Manitoba Hydro attempted to balance the financial integrity of the corporation with the impacts on customers, in making its interim rate request

Please see Section 1.3 of the Application, which discusses how Manitoba Hydro has balanced the needs of the corporation with the impacts on customers in making its interim rate request.

COALITION MFR 25

Financial Results and Forecasts

Further to PUB MFR #3, a breakdown of domestic revenues between revenues at existing rates and additional revenues from approved and projected rate increases

Please see the response to PUB MFR 3.

COALITION MFR 26

Financial Results and Forecasts

Manitoba Hydro's Annual Business Plan for 2021/22

Manitoba Hydro's Annual Business Plan for 2021/22 can be found on its website at the link below:
https://www.hydro.mb.ca/corporate/news_media/pdf/manitoba_hydro_annual_business_plan_21_22.pdf

COALITION MFR 27

Financial Results and Forecasts

Details of the contracted wage settlements in place for 2020/21, 2021/22 and 2022/23 [reference: Coalition/MH I-14 (j) from the 2019/20 Rate Application].

The following table provides details of the contracted wage settlements in place, an update to Coalition/MH I-14 (j) from the 2019/20 Rate Application.

Contracted Wage Settlements

Effective Date	AMHSSE	CE**	CUPE	IBEW	MHPEA**	UNIFOR*
January 1, 2017	0.00%	0.00%	0.00%	2.00%	0.00%	0.00%
January 1, 2018	1.00%	0.00%	1.00%	2.00%	0.00%	1.00%
January 1, 2019	1.25%	0.75%	1.25%	1.50%	0.75%	1.25%
January 1, 2020	1.50%	1.00%	1.50%	0.50%	1.00%	1.50%
January 1, 2021	TBD	1.50%	TBD	1.50%	1.50%	TBD
Janaury 1, 2022	TBD	TBD	TBD	TBD	TBD	TBD
January 1, 2023	TBD	TBD	TBD	TBD	TBD	TBD

** UNIFOR contracted wage settlements are effective the beginning of each pay period preceeding January 1st.*

*** Corporate Exempt & Manitoba Hydro Professional Engineers Association employees' pay increase in 2019 was effective March 21, 2019. While the pay increase in 2020 was effective March 19, 2020.*