

Management's Discussion and Analysis

This Management's Discussion and Analysis (MD&A), dated July 26, 2022, relates to the consolidated financial position and results of operations of Canadian National Railway Company, together with its wholly-owned subsidiaries, collectively "CN" or the "Company," and should be read in conjunction with the Company's 2022 unaudited Interim Consolidated Financial Statements and Notes thereto. It should also be read in conjunction with the Company's 2021 audited Annual Consolidated Financial Statements and Notes thereto, and the 2021 Annual MD&A. All financial information reflected herein is expressed in Canadian dollars and prepared in accordance with United States generally accepted accounting principles (GAAP), unless otherwise noted.

CN's common shares are listed on the Toronto and New York stock exchanges. Additional information about CN filed with Canadian securities regulatory authorities and the United States Securities and Exchange Commission (SEC), including the Company's 2021 Annual Information Form and Form 40-F, may be found online on SEDAR at www.sedar.com, on the SEC's website at www.sec.gov through EDGAR, and on the Company's website at www.cn.ca in the Investors section. Printed copies of such documents may be obtained by contacting CN's Corporate Secretary's Office.

Strategy overview

A description of the Company's strategy is provided in the section entitled *Strategy overview* of the Company's 2021 Annual MD&A.

Second quarter 2022 compared to second quarter 2021

- CN's focus on operational efficiency and scheduled railroading with an emphasis on velocity resulted in improved operating results, including record fuel efficiency.
- Record revenues of \$4,344 million, an increase of \$746 million or 21%, mainly due to higher fuel surcharge revenues.
- Operating expenses of \$2,575 million, an increase of \$359 million or 16%, mainly due to higher fuel prices.
- Record operating income of \$1,769 million, an increase of \$387 million or 28%, and record adjusted operating income of \$1,781 million, an increase of \$399 million, or 29%. ⁽¹⁾⁽²⁾
- Operating ratio ⁽³⁾ of 59.3%, an improvement of 2.3-points and adjusted operating ratio of 59.0%, an improvement of 2.6-points. ⁽¹⁾⁽²⁾
- Net income of \$1,325 million, an increase of \$289 million or 28%, and diluted earnings per share (EPS) of \$1.92, an increase of 32%. ⁽⁴⁾
- Record adjusted net income of \$1,334 million, an increase of \$274 million or 26%, and record adjusted diluted EPS of \$1.93, an increase of 30%. ⁽¹⁾⁽²⁾⁽⁴⁾
- Free cash flow for the second quarter and first six months of 2022 was \$997 million and \$1,568 million, respectively, an increase of \$256 million and \$288 million, respectively, compared to the same periods in 2021. ⁽¹⁾⁽⁵⁾
- Share repurchases for the second quarter and first six months of 2022 were \$1,173 million and \$2,466 million, respectively, an increase of \$1,050 million and \$2,052 million, respectively, compared to the same periods in 2021.
- CN paid a quarterly dividend of \$0.7325 per share, representing an increase of 19%, amounting to \$504 million.

(1) These Non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

(2) See the section of this MD&A entitled *Adjusted performance measures* for an explanation of these non-GAAP measures.

(3) Operating ratio is defined as operating expenses as a percentage of revenues.

(4) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – *Change in accounting policy* to CN's unaudited Interim Consolidated Financial Statements for additional information.

(5) See the section of this MD&A entitled *Liquidity and capital resources – Free cash flow* for an explanation of this non-GAAP measure.

Management's Discussion and Analysis

COVID-19 pandemic

The COVID-19 pandemic necessitated governments, institutions and communities to take actions that resulted in a partial economic shutdown beginning in March 2020. Significant vaccination campaigns, as well as Canadian federal mandates requiring federally-regulated railways to establish employee vaccination policies, which have since been lifted by the Canadian government, have resulted in the vaccination of substantially all active CN employees. New variants of the virus led to the re-imposition of restrictive measures across North America and in other parts of the world in late 2021, however, in 2022, many North American jurisdictions have relaxed or eliminated pandemic-related restrictions and mandates. While certain parts of the world have experienced outbreaks of new variants of the virus, resulting in further pandemic-related lockdowns and restrictive measures, the future impact on North American jurisdictions is unknown.

The long-term implications of the COVID-19 pandemic, including the extent of the impact on the business, financial position, results of operations and liquidity of the Company, remain unknown and will depend on future developments, which are highly uncertain and cannot be predicted, including the scope and duration of the pandemic as well as additional actions taken by governmental authorities and other parties in response to the pandemic.

Acquisition

Massena rail line

On April 6, 2020, the STB issued its decision conditionally approving the acquisition of the Massena rail line in New York from CSX Corporation ("CSX"), which the Company announced its agreement to purchase on August 29, 2019. On June 6, 2020, CN and CSX sought reconsideration asking the STB to remove its condition which requires the parties to propose a change to the line sale agreement for the STB's review. On February 25, 2021, the STB denied the parties' petitions for reconsideration. On April 23, 2021, the Company appealed the STB's condition in its April 6, 2020 and February 25, 2021 decisions. The purchase and sale agreement was terminated and on June 7, 2022, the Company, CSX, and the STB filed a joint motion for dismissal of the appeal with the United States Court of Appeals for the Seventh Circuit because the appeal was rendered moot and the Court dismissed the appeal.

2022 Business outlook and assumptions

For 2022, the Company continues to expect volume growth, in terms of Revenue ton miles (RTMs) in the low single-digit range, across a range of commodities including Canadian coal exports, U.S grain exports, refined petroleum products, crude oil, plastics and chemicals, and frac sand. The Company continues to expect significantly lower volumes of Canadian grain and lower volumes of potash as well as lumber and panels for 2022 compared to 2021.

Underpinning the 2022 business outlook, the Company assumes that North American industrial production will increase in the mid single-digit range. For the 2021/2022 crop year, the grain crop in Canada was below its three-year average and the U.S. grain crop was in line with its three-year average. The Company assumes that the 2022/2023 grain crop in Canada will be above its three-year average (or in line when excluding the significantly lower 2021/2022 crop year) and that the 2022/2023 U.S. grain crop will be in line with its three-year average.

In 2022, the Company continues to expect to invest approximately 17% of revenues in its capital program.

The forward-looking statements discussed in this Strategy overview section are subject to risks and uncertainties that could cause actual results or performance to differ materially from those expressed or implied in such statements and are based on certain factors and assumptions which the Company considers reasonable, about events, developments, prospects and opportunities that may not materialize or that may be offset entirely or partially by other events and developments. In addition to the assumptions and expectations discussed in this section, reference should be made to the section of this MD&A entitled *Forward-looking statements* for assumptions and risk factors affecting such statements.

Management's Discussion and Analysis

Forward-looking statements

Certain statements included in this MD&A are "forward-looking statements" within the meaning of the *United States Private Securities Litigation Reform Act of 1995* and under Canadian securities laws, including statements based on management's assessment and assumptions and publicly available information with respect to CN. By their nature, forward-looking statements involve risks, uncertainties and assumptions. CN cautions that its assumptions may not materialize and that current economic conditions render such assumptions, although reasonable at the time they were made, subject to greater uncertainty. Forward-looking statements may be identified by the use of terminology such as "believes," "expects," "anticipates," "assumes," "outlook," "plans," "targets", or other similar words.

Forward-looking statements include, but are not limited to, those set forth in the table below, which also presents key assumptions used in determining the forward-looking statements. See also the section of this MD&A entitled *Strategy overview - 2022 Business outlook and assumptions*.

Forward-looking statements	Key assumptions
Statements relating to revenue growth opportunities, including those referring to general economic and business conditions	<ul style="list-style-type: none">• North American and global economic growth• Long-term growth opportunities being less affected by current economic conditions• No material disruption of CN's operations or of the economy's supply chains in the short term
Statements relating to the Company's ability to meet debt repayments and future obligations in the foreseeable future, including income tax payments, and capital spending	<ul style="list-style-type: none">• Adequate credit ratios• Investment-grade credit ratings• Access to capital markets• Adequate cash generated from operations and other sources of financing
Statements relating to pension contributions	<ul style="list-style-type: none">• Adequate cash generated from operations and other sources of financing• Adequate long-term return on investment on pension plan assets• Level of funding as determined by actuarial valuations, particularly influenced by discount rates for funding purposes

Forward-looking statements are not guarantees of future performance and involve risks, uncertainties and other factors which may cause actual results, performance or achievements of CN to be materially different from the outlook or any future results, performance or achievements implied by such statements. Accordingly, readers are advised not to place undue reliance on forward-looking statements. Important risk factors that could affect the forward-looking statements include, but are not limited to, general economic and business conditions, including factors impacting global supply chains such as pandemics and geopolitical conflicts and tensions; industry competition; inflation, currency and interest rate fluctuations; changes in fuel prices; legislative and/or regulatory developments; compliance with environmental laws and regulations; actions by regulators; increases in maintenance and operating costs; security threats; reliance on technology and related cybersecurity risk; trade restrictions or other changes to international trade arrangements; transportation of hazardous materials; various events which could disrupt operations, including illegal blockades of rail networks, and natural events such as severe weather, droughts, fires, floods and earthquakes; climate change; labor negotiations and disruptions; environmental claims; uncertainties of investigations, proceedings or other types of claims and litigation; risks and liabilities arising from derailments; timing and completion of capital programs; and other risks detailed from time to time in reports filed by CN with securities regulators in Canada and the U.S., including its Annual Information Form and Form 40-F. See the section entitled *Business risks* of this MD&A and the Company's 2021 Annual MD&A for a description of major risk factors relating to CN.

Forward-looking statements reflect information as of the date on which they are made. CN assumes no obligation to update or revise forward-looking statements to reflect future events, changes in circumstances, or changes in beliefs, unless required by applicable securities laws. In the event CN does update any forward-looking statement, no inference should be made that CN will make additional updates with respect to that statement, related matters, or any other forward-looking statement.

Management's Discussion and Analysis

Financial highlights

The following table lists key measures of the Company's financial performance and liquidity for the three and six months ended June 30, 2022 and 2021 and financial position measures as at June 30, 2022 and December 31, 2021:

<i>In millions, except percentages and per share data</i>	Three months ended June 30			Six months ended June 30		
	2022	2021	% Change Fav (Unfav)	2022	2021	% Change Fav (Unfav)
Financial performance and liquidity						
Revenues	\$ 4,344	\$ 3,598	21%	\$ 8,052	\$ 7,133	13%
Operating income	\$ 1,769	\$ 1,382	28%	\$ 2,996	\$ 2,709	11%
Adjusted operating income ⁽¹⁾⁽²⁾	\$ 1,781	\$ 1,382	29%	\$ 3,018	\$ 2,572	17%
Net income ⁽³⁾	\$ 1,325	\$ 1,036	28%	\$ 2,243	\$ 2,012	11%
Adjusted net income ⁽¹⁾⁽²⁾⁽³⁾	\$ 1,334	\$ 1,060	26%	\$ 2,259	\$ 1,934	17%
Basic earnings per share	\$ 1.92	\$ 1.46	32%	\$ 3.23	\$ 2.83	14%
Diluted earnings per share ⁽³⁾	\$ 1.92	\$ 1.46	32%	\$ 3.22	\$ 2.83	14%
Adjusted diluted earnings per share ⁽¹⁾⁽²⁾⁽³⁾	\$ 1.93	\$ 1.49	30%	\$ 3.25	\$ 2.72	19%
Dividends per share	\$ 0.7325	\$ 0.6150	19%	\$ 1.4650	\$ 1.2300	19%
Operating ratio ⁽⁴⁾	59.3%	61.6%	2.3 -pts	62.8%	62.0%	(0.8)-pts
Adjusted operating ratio ⁽¹⁾⁽²⁾	59.0%	61.6%	2.6 -pts	62.5%	63.9%	1.4 -pts
Net cash provided by operating activities	\$ 1,713	\$ 1,475	16%	\$ 2,283	\$ 2,427	(6%)
Net cash used in investing activities	\$ 716	\$ 1,642	56%	\$ 817	\$ 2,055	60%
Free cash flow ⁽¹⁾⁽⁵⁾	\$ 997	\$ 741	35%	\$ 1,568	\$ 1,280	23%
Financial position						
Total assets	\$ 49,285	\$ 48,538	2%			
Total long-term financial liabilities ⁽⁶⁾	\$ 22,785	\$ 22,674	—%			

(1) These non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

(2) See the section of this MD&A entitled Adjusted performance measures for an explanation of these non-GAAP measures.

(3) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

(4) Operating ratio is defined as operating expenses as a percentage of revenues.

(5) See the section of this MD&A entitled Liquidity and capital resources – Free cash flow for an explanation of this non-GAAP measure.

(6) Total long-term financial liabilities is the sum of deferred income taxes, other liabilities and deferred credits, pension and other postretirement benefits, long-term debt (excluding the current portion) and operating lease liabilities.

Financial results

Second quarter and first half of 2022 compared to corresponding periods in 2021

Revenues for the second quarter of 2022 were \$4,344 million compared to \$3,598 million in the same period in 2021, an increase of \$746 million, or 21%. Revenues for the first half of 2022 were \$8,052 million compared to \$7,133 million in the same period in 2021, an increase of \$919 million, or 13%. The increases in both periods were mainly due to higher applicable fuel surcharge rates, freight rate increases, higher Canadian export volumes of coal via west coast ports, higher volumes of U.S. grain and the positive translation impact of a weaker Canadian dollar; partly offset by significantly lower export volumes of Canadian grain.

Operating expenses for the second quarter of 2022 were \$2,575 million compared to \$2,216 million for the same period in 2021, an increase of \$359 million, or 16%. Operating expenses for the first half of 2022 were \$5,056 million compared to \$4,424 million for the same period in 2021, an increase of \$632 million, or 14%. The increases in both periods were mainly driven by higher fuel prices and the negative translation impact of a weaker Canadian dollar; partly offset by lower average headcount. In addition, the increase in the first half of 2022 was also due to the Recovery of the loss on assets held for sale of \$137 million recorded in the first quarter of 2021 resulting from the Company entering into an agreement for the sale of non-core lines.

Management's Discussion and Analysis

Operating income for the second quarter of 2022 increased by \$387 million, or 28%, to \$1,769 million when compared to the same period in 2021. Operating income for the first half of 2022 increased by \$287 million, or 11%, to \$2,996 million when compared to the same period in 2021.

The operating ratio, defined as operating expenses as a percentage of revenues, was 59.3% in the second quarter of 2022 compared to 61.6% in the second quarter of 2021, a 2.3-point improvement. The operating ratio for the first half of 2022 was 62.8% compared to 62.0% in 2021, a 0.8-point increase.

Net income for the second quarter of 2022 was \$1,325 million, an increase of \$289 million, or 28%, and diluted earnings per share increased by 32% to \$1.92, when compared to the same period in 2021. ⁽¹⁾ Net income for the first half of 2022 was \$2,243 million, an increase of \$231 million, or 11%, and diluted earnings per share increased by 14% to \$3.22, when compared to the same period in 2021. ⁽¹⁾

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Operating highlights

The following table lists key measures of the Company's operating performance, for the purpose of measuring the efficiency and effectiveness of train operations, for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30			Six months ended June 30		
	2022	2021	% Change Fav (Unfav)	2022	2021	% Change Fav (Unfav)
Gross ton miles (GTMs) (millions) ⁽¹⁾	120,742	116,735	3%	231,808	237,515	(2%)
Train weight (tons) ⁽²⁾	9,512	9,840	(3%)	9,478	9,623	(2%)
Train length (feet) ⁽³⁾	8,427	8,749	(4%)	8,320	8,536	(3%)
Through network train speed (miles per hour) ⁽⁴⁾	19.3	19.5	(1%)	18.0	18.8	(4%)
Fuel efficiency (US gallons of locomotive fuel consumed per 1,000 GTMs) ⁽⁵⁾	0.838	0.869	4%	0.873	0.892	2%
Through dwell (entire railroad, hours) ⁽⁶⁾	7.2	7.7	6%	8.1	8.0	(1%)
Car velocity (car miles per day) ⁽⁷⁾	209	205	2%	185	195	(5%)

(1) GTMs: The workload performed by system trains in hauling freight or equipment. GTMs are calculated by multiplying the trailing weight by the distance the train moved. A larger number is an indicator of more traffic (and thus more revenue) being moved.

(2) Train weight: An efficiency measurement on how much tonnage each mainline train handles on average as it crosses the network. Calculated as the total of GTMs and divided by total train miles, this measure provides insight on how well each train was maximized in terms of its capacity to move traffic. This operating measure was formerly named Train productivity.

(3) Train length: An efficiency measurement on average trailing length of each mainline train on the network. Calculated as the total of car foot miles (the sum of car length multiplied by miles travelled for each trailing car) divided by total train miles, this measure provides insight on how well each train was maximized in terms of its capacity to move traffic.

(4) Through network train speed: A measure of the line-haul movement from origin to destination, including time at terminals. The average speed is calculated by dividing train miles by total hours operated, excluding yard and local trains, passenger trains, maintenance of way trains, and foreign trains. This measure represents the fluidity of trains on the network, with a higher value also indicating a more fluid network.

(5) Fuel efficiency: This measure represents how efficient the Company is in the generation and utilization of locomotive horsepower in freight train operations, with a lower number indicating improved performance. Fuel efficiency is defined as US gallons of locomotive fuel consumed per 1,000 GTMs. Quarterly fuel efficiency metrics for 2021 have been revised based on more complete information.

(6) Through dwell: The average time a car resides within terminal boundaries expressed in hours. The measurement begins with a customer release, received interchange, or train arrival event and ends with a customer placement (actual or constructive), delivered or offered in interchange, or train departure event. This excludes stored, bad ordered, maintenance of way cars, or cars with dwell greater than 10 days. This measure represents the efficiency of handling cars within the terminal, with a lower value indicating higher performance.

(7) Car velocity: The average miles per day traveled by loaded and empty cars (including all active cars whether private, foreign or CN owned) on company lines. This measure represents the fluidity of cars on the network, calculated by the sum of miles each car traveled divided by the sum of all of the cars' active time, with a higher value indicating a smoother and more fluid operation.

Operating performance improved in the second quarter when compared to the same period in 2021, as the Company's focus on running a scheduled railroad drove improvements in velocity and dwell that outweighed the year-over-year decreases in train length and weight. The Company also achieved record fuel efficiency for the quarter and first half of 2022. Operating performance was negatively impacted in the first half of 2022 when compared to 2021, mainly due to harsher winter weather in the first quarter.

Management's Discussion and Analysis

Non-GAAP measures

This MD&A makes reference to non-GAAP measures, including adjusted performance measures, constant currency, free cash flow and adjusted debt-to-adjusted EBITDA multiple that do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies. From management's perspective, these non-GAAP measures are useful measures of performance and provide investors with supplementary information to assess the Company's results of operations and liquidity. These non-GAAP measures should not be considered in isolation or as a substitute for financial measures prepared in accordance with GAAP.

For further details of these non-GAAP measures, including a reconciliation to the most directly comparable GAAP financial measures, refer to the sections of this MD&A entitled *Adjusted performance measures*, *Constant currency* and *Liquidity and capital resources*.

Adjusted performance measures

Adjusted net income, adjusted earnings per share, adjusted operating income, adjusted operating expenses and adjusted operating ratio are non-GAAP measures that are used to set performance goals and to measure CN's performance. Management believes that these adjusted performance measures provide additional insight to management and investors into the Company's operations and underlying business trends as well as facilitate period-to-period comparisons, as they exclude certain significant items that are not reflective of CN's underlying business operations and could distort the analysis of trends in business performance. These items may include:

- i. operating expense adjustments: workforce reduction program, depreciation expense on the deployment of replacement system, advisory fees related to shareholder matters, losses and recoveries from assets held for sale, business acquisition-related costs;
- ii. non-operating expense adjustments: business acquisition-related financing fees, merger termination income, gains and losses on disposal of property; and
- iii. the effect of tax law changes and rate enactments.

These non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

For the three and six months ended June 30, 2022, the Company's adjusted net income was \$1,334 million, or \$1.93 per diluted share, and \$2,259 million, or \$3.25 per diluted share, respectively. The adjusted figures for the three and six months ended June 30, 2022 exclude advisory fees related to shareholder matters of \$12 million, or \$9 million after-tax (\$0.01 per diluted share), and \$22 million, or \$16 million after-tax (\$0.03 per diluted share), respectively, recorded in Casualty and other within the Consolidated Statements of Income.

For the three and six months ended June 30, 2021, the Company's adjusted net income was \$1,060 million, or \$1.49 per diluted share, and \$1,934 million, or \$2.72 per diluted share, respectively. ⁽¹⁾ The adjusted figures for the three and six months ended June 30, 2021 exclude amortization of bridge financing and other fees of \$32 million, or \$24 million after-tax (\$0.03 per diluted share) recorded in the second quarter, resulting from the Kansas City Southern ("KCS") transaction, recorded in Interest expense within the Consolidated Statements of Income. The adjusted figures for the six months ended June 30, 2021 also exclude the recovery of \$137 million, or \$102 million after-tax (\$0.14 per diluted share) recorded in the first quarter related to the loss on assets held for sale in the second quarter of 2020, to reflect an agreement for the sale of on-going rail operations, certain non-core rail lines in Wisconsin, Michigan and Ontario to a short line operator.

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Management's Discussion and Analysis

Adjusted net income is defined as Net income in accordance with GAAP adjusted for certain significant items. Adjusted diluted earnings per share is defined as adjusted net income divided by the weighted-average diluted shares outstanding. The following table provides a reconciliation of Net income and Earnings per share in accordance with GAAP, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP adjusted performance measures presented herein:

<i>In millions, except per share data</i>	Three months ended June 30		Six months ended June 30	
	2022	2021	2022	2021
Net income ⁽¹⁾	\$ 1,325	\$ 1,036	\$ 2,243	\$ 2,012
<i>Adjustments:</i>				
<i>Operating expense adjustments:</i>				
Advisory fees related to shareholder matters	12	—	22	—
Recovery of loss on assets held for sale	—	—	—	(137)
<i>Non-operating expense adjustments:</i>				
Amortization of bridge financing and other fees	—	32	—	32
<i>Tax adjustments:</i>				
Tax effect of adjustments ⁽²⁾	(3)	(8)	(6)	27
<i>Total adjustments</i>	9	24	16	(78)
<i>Adjusted net income</i> ⁽¹⁾	\$ 1,334	\$ 1,060	\$ 2,259	\$ 1,934
Diluted earnings per share ⁽¹⁾	\$ 1.92	\$ 1.46	\$ 3.22	\$ 2.83
<i>Impact of adjustments, per share</i>	0.01	0.03	0.03	(0.11)
<i>Adjusted diluted earnings per share</i> ⁽¹⁾	\$ 1.93	\$ 1.49	\$ 3.25	\$ 2.72

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

(2) The tax impact of adjustments is based on the nature of the item for tax purposes and related tax rates in the applicable jurisdiction.

Adjusted operating income is defined as Operating income in accordance with GAAP adjusted for certain significant operating expense items. Adjusted operating expenses is defined as Operating expenses in accordance with GAAP adjusted for certain significant operating expense items. Adjusted operating ratio is defined as adjusted operating expenses as a percentage of revenues. The following table provides a reconciliation of Operating income, Operating expenses and operating ratio, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP adjusted performance measures presented herein:

<i>In millions, except percentages</i>	Three months ended June 30		Six months ended June 30	
	2022	2021	2022	2021
Operating income	\$ 1,769	\$ 1,382	\$ 2,996	\$ 2,709
<i>Operating expense adjustments:</i>				
Advisory fees related to shareholder matters	12	—	22	—
Recovery of loss on assets held for sale	—	—	—	(137)
<i>Total operating expense adjustments</i>	12	—	22	(137)
<i>Adjusted operating income</i>	\$ 1,781	\$ 1,382	\$ 3,018	\$ 2,572
Operating expenses	\$ 2,575	\$ 2,216	\$ 5,056	\$ 4,424
<i>Total operating expense adjustments</i>	(12)	—	(22)	137
<i>Adjusted operating expenses</i>	\$ 2,563	\$ 2,216	\$ 5,034	\$ 4,561
Operating ratio	59.3 %	61.6 %	62.8 %	62.0 %
<i>Impact of adjustments</i>	(0.3 %)	— %	(0.3 %)	1.9 %
<i>Adjusted operating ratio</i>	59.0 %	61.6 %	62.5 %	63.9 %

Management's Discussion and Analysis

Constant currency

Financial results at constant currency allow results to be viewed without the impact of fluctuations in foreign currency exchange rates, thereby facilitating period-to-period comparisons in the analysis of trends in business performance. Measures at constant currency are considered non-GAAP measures and do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies. Financial results at constant currency are obtained by translating the current period results denominated in US dollars at the weighted average foreign exchange rates used to translate transactions denominated in US dollars of the comparable period of the prior year.

The average foreign exchange rates were \$1.28 and \$1.27 per US\$1.00 for the three and six months ended June 30, 2022, respectively, and \$1.23 and \$1.25 per US\$1.00 for the three and six months ended June 30, 2021, respectively.

On a constant currency basis, the Company's Net income would have been lower by \$20 million (\$0.03 per diluted share) for both the three and six months ended June 30, 2022.

The following table provides a reconciliation of the impact of constant currency and related percentage change at constant currency on the financial results, as reported for the three and six months ended June 30, 2022:

<i>In millions, except per share data</i>	Three months ended June 30				Six months ended June 30			
	2022	Constant currency impact	2021	% Change at constant currency Fav (Unfav)	2022	Constant currency impact	2021	% Change at constant currency Fav (Unfav)
Revenues								
Petroleum and chemicals	\$ 829	\$ (19)	\$ 685	18%	\$ 1,585	\$ (19)	\$ 1,346	16%
Metals and minerals	466	(13)	377	20%	872	(13)	745	15%
Forest products	513	(14)	451	11%	939	(14)	880	5%
Coal	249	(3)	158	56%	444	(3)	284	55%
Grain and fertilizers	604	(13)	609	(3%)	1,208	(13)	1,322	(10%)
Intermodal	1,326	(15)	1,037	26%	2,382	(15)	2,005	18%
Automotive	208	(6)	135	50%	373	(6)	293	25%
<i>Total freight revenues</i>	4,195	(83)	3,452	19%	7,803	(83)	6,875	12%
Other revenues	149	(3)	146	–%	249	(3)	258	(5%)
<i>Total revenues</i>	4,344	(86)	3,598	18%	8,052	(86)	7,133	12%
Operating expenses								
Labor and fringe benefits	681	(10)	692	3%	1,434	(10)	1,477	4%
Purchased services and material	557	(8)	527	(4%)	1,095	(8)	1,076	(1%)
Fuel	672	(23)	380	(71%)	1,197	(23)	744	(58%)
Depreciation and amortization	423	(6)	406	(3%)	843	(6)	810	(3%)
Equipment rents	87	(3)	83	(1%)	182	(3)	172	(4%)
Casualty and other	155	(5)	128	(17%)	305	(5)	282	(6%)
Recovery of loss on assets held for sale	–	–	–	–%	–	–	(137)	(100%)
<i>Total operating expenses</i>	2,575	(55)	2,216	(14%)	5,056	(55)	4,424	(13%)
<i>Operating income</i>	1,769	(31)	1,382	26%	2,996	(31)	2,709	9%
Interest expense	(128)	4	(158)	22%	(254)	4	(288)	13%
Other components of net periodic benefit income ⁽¹⁾	124	–	98	27%	249	–	197	26%
Other loss	(10)	–	51	(120%)	(24)	–	49	(149%)
<i>Income before income taxes</i> ⁽¹⁾	1,755	(27)	1,373	26%	2,967	(27)	2,667	10%
Income tax expense ⁽¹⁾	(430)	7	(337)	(26%)	(724)	7	(655)	(9%)
Net income ⁽¹⁾	\$ 1,325	\$ (20)	\$ 1,036	26%	\$ 2,243	\$ (20)	\$ 2,012	10%
Diluted earnings per share ⁽¹⁾	\$ 1.92	\$ (0.03)	\$ 1.46	29%	\$ 3.22	\$ (0.03)	\$ 2.83	13%

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Management's Discussion and Analysis

Revenues

The following table provides the components of total revenues and freight revenues, as well as other key operating measures, for the three and six months ended June 30, 2022 and 2021:

<i>In millions, unless otherwise indicated</i>	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Freight revenues	\$ 4,195	\$ 3,452	22%	19%	\$ 7,803	\$ 6,875	13%	12%
Other revenues	149	146	2%	—%	249	258	(3%)	(5%)
Total revenues	\$ 4,344	\$ 3,598	21%	18%	\$ 8,052	\$ 7,133	13%	12%
Freight revenues								
Petroleum and chemicals	\$ 829	\$ 685	21%	18%	\$ 1,585	\$ 1,346	18%	16%
Metals and minerals	466	377	24%	20%	872	745	17%	15%
Forest products	513	451	14%	11%	939	880	7%	5%
Coal	249	158	58%	56%	444	284	56%	55%
Grain and fertilizers	604	609	(1%)	(3%)	1,208	1,322	(9%)	(10%)
Intermodal	1,326	1,037	28%	26%	2,382	2,005	19%	18%
Automotive	208	135	54%	50%	373	293	27%	25%
Total freight revenues	\$ 4,195	\$ 3,452	22%	19%	\$ 7,803	\$ 6,875	13%	12%
Revenue ton miles (RTMs) (<i>millions</i>)	60,551	59,246	2%	2%	117,105	120,700	(3%)	(3%)
Freight revenue/RTM (<i>cents</i>)	6.93	5.83	19%	16%	6.66	5.70	17%	16%
Carloads (<i>thousands</i>)	1,474	1,469	—%	—%	2,820	2,900	(3%)	(3%)
Freight revenue/carload (\$)	2,846	2,350	21%	19%	2,767	2,371	17%	15%

Revenues for the quarter ended June 30, 2022 were \$4,344 million compared to \$3,598 million in the same period of 2021, an increase of \$746 million, or 21%. Revenues for the first half of 2022 were \$8,052 million compared to \$7,133 million in the same period in 2021, an increase of \$919 million, or 13%. The increases in both periods were mainly due to higher applicable fuel surcharge rates, freight rate increases, higher Canadian export volumes of coal via west coast ports, higher volumes of U.S. grain and the positive translation impact of a weaker Canadian dollar; partly offset by significantly lower export volumes of Canadian grain.

Fuel surcharge revenues increased by \$426 million in the second quarter and \$661 million in the first half of 2022 when compared to the same period in 2021, mainly as a result of higher applicable fuel surcharge rates.

RTMs, measuring the relative weight and distance of freight transported by the Company, increased by 2% in the second quarter and declined by 3% in the first half of 2022 when compared to the same periods in 2021. Freight revenue per RTM increased by 19% in the second quarter and increased by 17% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar. The increase in the first half of the year was also due to a decrease in the average length of haul.

Petroleum and chemicals

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (<i>millions</i>)	\$ 829	\$ 685	21%	18%	\$ 1,585	\$ 1,346	18%	16%
RTMs (<i>millions</i>)	12,330	10,054	23%	23%	23,889	20,786	15%	15%
Revenue/RTM (<i>cents</i>)	6.72	6.81	(1%)	(4%)	6.63	6.48	2%	1%
Carloads (<i>thousands</i>)	162	143	13%	13%	321	293	10%	10%

Revenues for this commodity group increased by \$144 million, or 21%, in the second quarter and \$239 million, or 18%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, increased volumes of refined petroleum products, petroleum crude, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Revenue per RTM decreased by 1% in the second quarter and increased by 2% in the first half of 2022 when compared to the same periods in 2021. The decrease in the second quarter was mainly due to an increase in the average length of haul; partly offset by higher applicable fuel

Management's Discussion and Analysis

surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar. The increase in the first half of the year was mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar in the second quarter; partly offset by an increase in the average length of haul.

Metals and minerals

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (<i>millions</i>)	\$ 466	\$ 377	24%	20%	\$ 872	\$ 745	17%	15%
RTMs (<i>millions</i>)	7,149	6,652	7%	7%	13,412	12,945	4%	4%
Revenue/RTM (<i>cents</i>)	6.52	5.67	15%	12%	6.50	5.76	13%	11%
Carloads (<i>thousands</i>)	236	241	(2%)	(2%)	445	464	(4%)	(4%)

Revenues for this commodity group increased by \$89 million, or 24%, in the second quarter and \$127 million, or 17%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases, higher volumes of frac sand and the positive translation impact of a weaker Canadian dollar; partly offset by lower volumes of construction materials.

Revenue per RTM increased by 15% in the second quarter and 13% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar; partly offset by an increase in the average length of haul.

Forest products

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (<i>millions</i>)	\$ 513	\$ 451	14%	11%	\$ 939	\$ 880	7%	5%
RTMs (<i>millions</i>)	6,650	6,957	(4%)	(4%)	12,469	13,627	(8%)	(8%)
Revenue/RTM (<i>cents</i>)	7.71	6.48	19%	16%	7.53	6.46	17%	15%
Carloads (<i>thousands</i>)	86	90	(4%)	(4%)	164	176	(7%)	(7%)

Revenues for this commodity group increased by \$62 million, or 14%, in the second quarter and \$59 million, or 7%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar; partly offset by lower volumes of lumber and woodpulp as a result of supply chain challenges.

Revenue per RTM increased by 19% in the second quarter and increased by 17% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Coal

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (<i>millions</i>)	\$ 249	\$ 158	58%	56%	\$ 444	\$ 284	56%	55%
RTMs (<i>millions</i>)	6,127	4,648	32%	32%	11,495	8,674	33%	33%
Revenue/RTM (<i>cents</i>)	4.06	3.40	19%	18%	3.86	3.27	18%	17%
Carloads (<i>thousands</i>)	129	100	29%	29%	247	169	46%	46%

Revenues for this commodity group increased by \$91 million, or 58%, in the second quarter and \$160 million, or 56% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher Canadian export volumes of thermal and metallurgical coal via west coast ports due to the re-opening of two mines in November 2021 and favorable market conditions due to rising fuel prices and higher applicable fuel surcharge rates.

Management's Discussion and Analysis

Revenue per RTM increased by 19% in the second quarter and increased by 18% in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was mainly due to higher applicable fuel surcharge rates. The increase in the first half of the year was mainly due to higher applicable fuel surcharge rates and a decrease in the average length of haul.

Grain and fertilizers

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (<i>millions</i>)	\$ 604	\$ 609	(1%)	(3%)	\$ 1,208	\$ 1,322	(9%)	(10%)
RTMs (<i>millions</i>)	12,453	14,922	(17%)	(17%)	25,804	32,763	(21%)	(21%)
Revenue/RTM (<i>cents</i>)	4.85	4.08	19%	16%	4.68	4.04	16%	15%
Carloads (<i>thousands</i>)	142	162	(12%)	(12%)	287	338	(15%)	(15%)

Revenues for this commodity group decreased by \$5 million, or 1%, in the second quarter and by \$114 million, or 9%, in the first half of 2022 when compared to the same periods in 2021, mainly due to lower export volumes of Canadian grain compared to record volumes in prior year; partly offset by higher volumes of U.S. grain, higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Revenue per RTM increased by 19% in the second quarter and increased by 16% in the first half of 2022 when compared to the same periods in 2021, mainly due to a decrease in the average length of haul, higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Intermodal

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (<i>millions</i>)	\$ 1,326	\$ 1,037	28%	26%	\$ 2,382	\$ 2,005	19%	18%
RTMs (<i>millions</i>)	15,070	15,409	(2%)	(2%)	28,626	30,642	(7%)	(7%)
Revenue/RTM (<i>cents</i>)	8.80	6.73	31%	29%	8.32	6.54	27%	26%
Carloads (<i>thousands</i>)	664	691	(4%)	(4%)	1,253	1,367	(8%)	(8%)

Revenues for this commodity group increased by \$289 million, or 28%, in the second quarter and \$377 million, or 19%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, an increase in ancillary services including container storage, freight rate increases and the positive translation impact of a weaker Canadian dollar; partly offset by lower international container traffic volumes via the port of Vancouver.

Revenue per RTM increased by 31% in the second quarter and 27% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, an increase in ancillary services including container storage, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Automotive

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (<i>millions</i>)	\$ 208	\$ 135	54%	50%	\$ 373	\$ 293	27%	25%
RTMs (<i>millions</i>)	772	604	28%	28%	1,410	1,263	12%	12%
Revenue/RTM (<i>cents</i>)	26.94	22.35	21%	17%	26.45	23.20	14%	12%
Carloads (<i>thousands</i>)	55	42	31%	31%	103	93	11%	11%

Revenues for this commodity group increased by \$73 million, or 54%, in the second quarter and \$80 million, or 27%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, higher volumes of finished vehicles and the positive translation impact of a weaker Canadian dollar.

Management's Discussion and Analysis

Revenue per RTM increased by 21% in the second quarter and 14% in the first half of 2022 when compared to the same periods in 2021, mainly due to a decrease in the average length of haul, which was significant in the second quarter, higher applicable fuel surcharge rates and the positive translation impact of a weaker Canadian dollar.

Other revenues

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Revenues (millions)	\$ 149	\$ 146	2%	–%	\$ 249	\$ 258	(3%)	(5%)

Other revenues increased by \$3 million, or 2%, in the second quarter and decreased by \$9 million, or 3%, in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was mainly due to higher revenues for vessels; partly offset by lower revenues for international freight forwarding. The decrease in the first half of the year was mainly due to lower revenues for international freight forwarding; partly offset by higher revenues for vessels.

Operating expenses

Operating expenses for the second quarter of 2022 were \$2,575 million compared to \$2,216 million in the same period of 2021. Operating expenses for the first half of 2022 were \$5,056 million compared to \$4,424 million in the same period of 2021. The increases of \$359 million, or 16%, in the second quarter and \$632 million, or 14%, in the first half of 2022 were mainly driven by higher fuel prices and the negative translation impact of a weaker Canadian dollar; partly offset by lower average headcount. In addition, the increase in the first half of 2022 was also due to the Recovery of the loss on assets held for sale of \$137 million recorded in the first quarter of 2021 resulting from the Company entering into an agreement for the sale of non-core lines.

The following table provides the components of total operating expenses for the three and six months ended June 30, 2022 and 2021:

<i>In millions, unless otherwise indicated</i>	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	2022	2021	% Change	% Change at constant currency
Labor and fringe benefits	\$ 681	\$ 692	2%	3%	\$ 1,434	\$ 1,477	3%	4%
Purchased services and material	557	527	(6%)	(4%)	1,095	1,076	(2%)	(1%)
Fuel	672	380	(77%)	(71%)	1,197	744	(61%)	(58%)
Depreciation and amortization	423	406	(4%)	(3%)	843	810	(4%)	(3%)
Equipment rents	87	83	(5%)	(1%)	182	172	(6%)	(4%)
Casualty and other	155	128	(21%)	(17%)	305	282	(8%)	(6%)
Recovery of loss on assets held for sale	–	–	–%	–%	–	(137)	(100%)	(100%)
Total operating expenses	\$ 2,575	\$ 2,216	(16%)	(14%)	\$ 5,056	\$ 4,424	(14%)	(13%)

Labor and fringe benefits

Labor and fringe benefits expense decreased by \$11 million, or 2%, in the second quarter and \$43 million, or 3%, in the first half of 2022 when compared to the same periods in 2021, mainly due to lower average headcount, incentive compensation and pension expense; partly offset by general wage increases and the negative translation impact of a weaker Canadian dollar.

Purchased services and material

Purchased services and material expense increased by \$30 million, or 6%, in the second quarter and \$19 million, or 2%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher material costs and the negative translation impact of a weaker Canadian dollar. In addition, the increase in the first half was also due to higher snow clearing driven by harsher winter operating conditions; partly offset by lower freight forwarding expense.

Management's Discussion and Analysis

Fuel

Fuel expense increased by \$292 million, or 77%, in the second quarter and \$453 million, or 61%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher fuel prices and the negative translation impact of a weaker Canadian dollar.

Depreciation and amortization

Depreciation and amortization expense increased by \$17 million, or 4% in the second quarter and \$33 million, or 4%, in the first half of 2022 when compared to the same periods in 2021, mainly due to a higher depreciable asset base and the negative translation impact of a weaker Canadian dollar.

Equipment rents

Equipment rents expense increased by \$4 million, or 5%, in the second quarter and \$10 million, or 6%, in the first half of 2022 when compared to the same periods in 2021, mainly due to the negative translation impact of a weaker Canadian dollar. In addition, the increase in the first half was also due to higher locomotive horsepower-hour expense.

Casualty and other

Casualty and other expense increased by \$27 million, or 21%, in the second quarter and \$23 million, or 8%, in the first half of 2022 when compared to the same periods in 2021, mainly due to advisory fees related to shareholder matters of \$12 million in the second quarter and \$22 million in the first half and the negative translation impact of a weaker Canadian dollar.

Recovery of loss on assets held for sale

Recovery of loss on assets held for sale of \$137 million (\$102 million after-tax) in the first quarter of 2021 resulting from the Company entering into an agreement with a short line operator, for the sale of non-core lines in Wisconsin, Michigan and Ontario representing 850 miles that were classified as assets held for sale plus an additional 50 miles of track and roadway assets. See *Note 6 – Assets held for sale* to the Company's unaudited Interim Consolidated Financial Statements for further information.

Other income and expenses

Interest expense

Interest expense was \$128 million and \$254 million for the three and six months ended June 30, 2022, respectively, compared to \$158 million and \$288 million, respectively, for the same periods in 2021. The decreases in both periods were mainly due to amortization of bridge financing and other fees of \$32 million in 2021 resulting from the KCS transaction. See *Note 4 – Acquisitions* to the Company's unaudited Interim Consolidated Financial Statements for further information.

Other components of net periodic benefit income

Other components of net periodic benefit income were \$124 million and \$249 million for the three and six months ended June 30, 2022, respectively, compared to \$98 million and \$197 million for the same periods in 2021⁽¹⁾. The increases in both periods were due to lower amortization of net actuarial loss and higher expected return on assets; partly offset by higher interest cost. These effects primarily resulted from changes to discount rates, actual returns in excess of expected returns, as well as an increase to the Company's expected long-term rate of return assumption in 2022.

Other income (loss)

Other loss was \$10 million and \$24 million for the three and six months ended June 30, 2022 compared to other income of \$51 million and \$49 million, respectively, for the same periods in 2021. The decreases in both periods were mainly due to fluctuations in the fair value of the equity investment in autonomous driving technology.

Income tax expense⁽¹⁾

Income tax expense was \$430 million and \$724 million for the three and six months ended June 30, 2022, respectively, compared to \$337 million and \$655 million for the same periods in 2021. The effective tax rates for the three and six months ended June 30, 2022 were 24.5% and 24.4%, respectively, compared to 24.5% and 24.6%, respectively, for the same periods in 2021.

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See *Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements* for additional information.

Management's Discussion and Analysis

Summary of quarterly financial data

In millions, except per share data	2022 Quarters			2021 Quarters			2020 Quarters		
	Second	First	Fourth	Third	Second	First	Fourth	Third	
Revenues	\$ 4,344	\$ 3,708	\$ 3,753	\$ 3,591	\$ 3,598	\$ 3,535	\$ 3,656	\$ 3,409	
Operating income ⁽¹⁾	\$ 1,769	\$ 1,227	\$ 1,566	\$ 1,341	\$ 1,382	\$ 1,327	\$ 1,411	\$ 1,366	
Dividends per share	\$ 0.7325	\$ 0.7325	\$ 0.6150	\$ 0.6150	\$ 0.6150	\$ 0.6150	\$ 0.5750	\$ 0.5750	
Financial measures impacted by change in accounting policy									
Net income ⁽¹⁾⁽²⁾	\$ 1,325	\$ 918	\$ 1,201	\$ 1,686	\$ 1,036	\$ 976	\$ 1,016	\$ 982	
Net income as previously reported ⁽¹⁾	N/A	N/A	\$ 1,199	\$ 1,685	\$ 1,034	\$ 974	\$ 1,021	\$ 985	
Basic earnings per share ⁽²⁾	\$ 1.92	\$ 1.31	\$ 1.70	\$ 2.38	\$ 1.46	\$ 1.37	\$ 1.43	\$ 1.38	
Basic earnings per share as previously reported	N/A	N/A	\$ 1.70	\$ 2.38	\$ 1.46	\$ 1.37	\$ 1.44	\$ 1.39	
Diluted earnings per share ⁽¹⁾⁽²⁾	\$ 1.92	\$ 1.31	\$ 1.70	\$ 2.37	\$ 1.46	\$ 1.37	\$ 1.42	\$ 1.38	
Diluted earnings per share as previously reported ⁽¹⁾	N/A	N/A	\$ 1.69	\$ 2.37	\$ 1.46	\$ 1.37	\$ 1.43	\$ 1.38	

(1) Certain quarters include items that management believes do not necessarily arise as part of CN's normal day-to-day operations and can distort the analysis of trends in business performance. See the section of this MD&A entitled *Adjusted performance measures* as well as the Company's 2021 Annual MD&A for additional information on these items.

(2) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – *Change in accounting policy* to CN's unaudited Interim Consolidated Financial Statements for additional information.

Revenues generated by the Company during the year are influenced by seasonal weather conditions, general economic conditions, cyclical demand for rail transportation and competitive forces in the transportation marketplace (see the section entitled *Business risks* of the Company's 2021 Annual MD&A). Operating expenses reflect the impact of freight volumes, seasonal weather conditions, labor costs, fuel prices, and the Company's productivity initiatives. Fluctuations in the Canadian dollar relative to the US dollar have also affected the conversion of the Company's US dollar-denominated revenues and expenses and resulted in fluctuations in Net income in the rolling eight quarters presented above.

Liquidity and capital resources

An analysis of the Company's liquidity and capital resources is provided in the section entitled *Liquidity and capital resources* of the Company's 2021 Annual MD&A. There were no significant changes during the first half of 2022, except as noted below.

As at June 30, 2022 and December 31, 2021, the Company had Cash and cash equivalents of \$465 million and \$838 million, respectively; Restricted cash and cash equivalents of \$555 million and \$503 million, respectively; and a working capital deficit of \$1,402 million and a surplus of \$306 million, respectively. ⁽¹⁾ There are currently no specific requirements relating to working capital other than in the normal course of business as discussed herein.

The Company expects cash from operations and its various sources of financing to be sufficient to meet its ongoing obligations.

(1) Working capital is a Non-GAAP measure which management believes is a useful measure of liquidity. The Company defines working capital as current assets less current liabilities. Working capital as at June 30, 2022 was calculated as current assets of \$3,354 million less current liabilities of \$4,756 million. Working capital as at December 31, 2021 was calculated as current assets of \$3,426 million less current liabilities of \$3,120 million. Working capital does not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to a similar measure presented by other companies.

Available financing sources

Shelf prospectus and registration statement

On May 4, 2022, the Company filed a new shelf prospectus with Canadian securities regulators and a registration statement with the United States Securities and Exchange Commission (SEC), pursuant to which CN may issue up to \$6.0 billion of debt securities in the Canadian and U.S. capital markets over a 25 month period following the filing date. This shelf prospectus and registration statement replaced CN's previous shelf prospectus and registration statement that expired on March 11, 2022. Access to the Canadian and U.S. capital markets under the shelf prospectus and registration statement is dependent on market conditions.

Management's Discussion and Analysis

Revolving credit facilities

The Company has an unsecured revolving credit facility with a consortium of lenders which is available for general corporate purposes including backstopping the Company's commercial paper programs. The revolving credit facility agreement adopts a sustainability linked loan structure whereby its applicable margins are adjusted upon achievement of certain sustainability targets, starting in 2022. The credit facility of \$2.5 billion consists of a \$1.25 billion tranche maturing on March 31, 2025 and a \$1.25 billion tranche maturing on March 31, 2027. The credit facility provides for borrowings at various benchmark interest rates, such as Secured Overnight Financing Rate (SOFR) and the Canadian Dollar Offered Rate (CDOR), plus applicable margins, based on CN's credit ratings and sustainability targets.

As at June 30, 2022 and December 31, 2021, the Company had no outstanding borrowings under this revolving credit facility and there were no draws during the six months ended June 30, 2022.

On March 18, 2022, the Company entered into a \$1.0 billion two-year unsecured revolving credit facility agreement with a consortium of lenders. The credit facility is available for working capital and general corporate purposes and provides for borrowings at various benchmark interest rates, such as SOFR and CDOR, plus applicable margins, based on CN's credit ratings. As at June 30, 2022, the Company had no outstanding borrowings under this revolving credit facility and there were no draws during the six months ended June 30, 2022.

Equipment loans

The Company has a non-revolving term loan credit facility for financing or refinancing the purchase of equipment. The equipment loans made under the non-revolving credit facility have a tenor of 20 years, bear interest at variable rates such as LIBOR and CDOR plus a margin, are repayable in equal quarterly installments, are prepayable at any time without penalty, and are secured by rolling stock.

As at June 30, 2022, the Company had outstanding borrowings of US\$557 million (\$717 million) and had no further amount available under this non-revolving term loan facility. As at December 31, 2021, the Company had outstanding borrowings of US\$572 million (\$723 million) and had no further amount available under this non-revolving term loan facility.

Commercial paper

The Company's commercial paper programs are backstopped by the Company's \$2.5 billion revolving credit facility. The maximum aggregate principal amount of commercial paper that can be issued is \$2.5 billion, or the equivalent amount in US dollars.

As at June 30, 2022 and December 31, 2021, the Company had total commercial paper borrowings of US\$1,465 million (\$1,886 million) and US\$111 million (\$140 million), respectively, presented in Current portion of long-term debt on the Consolidated Balance Sheets.

Accounts receivable securitization program

The Company has an agreement, expiring on February 1, 2024, to sell an undivided co-ownership interest in a revolving pool of accounts receivable to unrelated trusts for maximum cash proceeds of \$450 million. The Company has retained the responsibility for servicing, administering and collecting the receivables sold. The average servicing period is approximately one month and the interest on borrowings under the Accounts receivable securitization program is renewed based on commercial paper, LIBOR or CDOR rates then in effect.

As at June 30, 2022, and December 31, 2021, the Company had no borrowings under the accounts receivable securitization program and there were no activities for the six months ended June 30, 2022.

Bilateral letter of credit facilities

The Company has a series of committed and uncommitted bilateral letter of credit facility agreements. On March 31, 2022, the Company extended the maturity date of certain committed bilateral letter of credit facility agreements to April 28, 2025.

As at June 30, 2022, the Company had outstanding letters of credit of \$448 million (\$394 million as at December 31, 2021) under the committed facilities from a total available amount of \$509 million (\$518 million as at December 31, 2021) and \$105 million (\$158 million as at December 31, 2021) under the uncommitted facilities.

As at June 30, 2022, included in Restricted cash and cash equivalents were \$447 million (\$396 million as at December 31, 2021) and \$100 million (\$100 million as at December 31, 2021) which were pledged as collateral under the committed and uncommitted bilateral letter of credit facilities, respectively.

Additional information relating to the Company's financing sources is provided in the section entitled *Liquidity and capital resources – Available financing sources* of the Company's 2021 Annual MD&A as well as *Note 9 – Financing activities* to the Company's unaudited Interim Consolidated Financial Statements.

Management's Discussion and Analysis

Credit ratings

The following table provides the Company's long-term debt and commercial paper credit ratings as of the date of this MD&A, which remain unchanged from those described in the section entitled *Liquidity and capital resources – Credit ratings* of the Company's 2021 Annual MD&A.

	Outlook	Long-term debt rating ⁽¹⁾	Commercial paper rating ⁽¹⁾
DBRS Morningstar	Stable	A	R-1 (low)
Moody's Investors Service	Negative	A2	P-1
Standard & Poor's	Negative	A	A-1

(1) These credit ratings are not recommendations to purchase, hold, or sell the securities referred to above. Ratings may be revised or withdrawn at any time by the credit rating agencies. Each credit rating should be evaluated independently of any other credit rating.

Cash flows

The following table provides the cash flows for the three and six months ended June 30, 2022 and 2021:

In millions	Three months ended June 30			Six months ended June 30		
	2022	2021	Variance	2022	2021	Variance
Net cash provided by operating activities	\$ 1,713	\$ 1,475	\$ 238	\$ 2,283	\$ 2,427	\$ (144)
Net cash used in investing activities	(716)	(1,642)	926	(817)	(2,055)	1,238
Net cash used in financing activities	(1,023)	215	(1,238)	(1,788)	(377)	(1,411)
Effect of foreign exchange fluctuations on cash, cash equivalents, restricted cash, and restricted cash equivalents	1	(1)	2	1	(1)	2
Net increase (decrease) in cash, cash equivalents, restricted cash, and restricted cash equivalents	(25)	47	(72)	(321)	(6)	(315)
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of period	1,045	1,047	(2)	1,341	1,100	241
Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period	\$ 1,020	\$ 1,094	\$ (74)	\$ 1,020	\$ 1,094	\$ (74)

Free cash flow

Free cash flow is a useful measure of liquidity as it demonstrates the Company's ability to generate cash for debt obligations and for discretionary uses such as payment of dividends, share repurchases, and strategic opportunities. The Company defines its free cash flow measure as the difference between net cash provided by operating activities and net cash used in investing activities, adjusted for the impact of (i) business acquisitions and (ii) merger transaction-related payments, cash receipts and cash income taxes, which are items that are not indicative of operating trends. Free cash flow does not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

The following table provides a reconciliation of Net cash provided by operating activities in accordance with GAAP, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP free cash flow presented herein:

In millions	Three months ended June 30		Six months ended June 30	
	2022	2021	2022	2021
Net cash provided by operating activities	\$ 1,713	\$ 1,475	\$ 2,283	\$ 2,427
Net cash used in investing activities	(716)	(1,642)	(817)	(2,055)
Net cash provided before financing activities	997	(167)	1,466	372
Adjustments:				
Cash income taxes for merger transaction-related payments and cash receipts ⁽¹⁾	–	–	102	–
Transaction-related costs ⁽²⁾	–	63	–	63
Advance for acquisition ⁽²⁾	–	845	–	845
Total adjustments	–	908	102	908
Free cash flow	\$ 997	\$ 741	\$ 1,568	\$ 1,280

(1) Relates to income tax payments of \$102 million for KCS merger transaction-related payments and cash receipts. See Note 3 – Acquisitions, Terminated CN KCS merger agreement, to the Company's 2021 Annual Consolidated Financial Statements and the section entitled *Adjusted performance measures* to the Company's 2021 Annual MD&A filed on February 1, 2022 which may be found online on SEDAR at www.sedar.com, on the SEC's website at www.sec.gov through EDGAR, and on the Company's website at www.cn.ca in the Investors section for additional information.

(2) Relates to an advance to KCS and other transaction costs paid. See Note 4 – Acquisition to the Company's unaudited Interim Consolidated Financial Statements for further information.

Management's Discussion and Analysis

Operating activities

Net cash provided by operating activities increased by \$238 million in the second quarter of 2022 and decreased by \$144 million in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was mainly due to higher earnings excluding non cash items and favorable changes in working capital, partly offset by higher income tax instalment payments. The decrease in the first half was mainly due to higher income tax instalment payments partly offset by higher earnings excluding non-cash items.

Pension contributions

The Company's contributions to its various defined benefit pension plans are made in accordance with the applicable legislation in Canada and the U.S. and such contributions follow minimum and maximum thresholds as determined by actuarial valuations.

Actuarial valuations are generally required on an annual basis for all Canadian defined benefit pension plans, or when deemed appropriate by the Office of the Superintendent of Financial Institutions (OSFI). Actuarial valuations are also required annually for the Company's U.S. qualified defined benefit pension plans. For accounting purposes, the funded status is calculated under GAAP. For funding purposes, the funded status of the Company's Canadian registered defined benefit pension plans is calculated under going concern and solvency scenarios as prescribed under federal pension legislation and is subject to guidance issued by the Canadian Institute of Actuaries and OSFI. The federal pension legislation requires funding deficits to be paid over a number of years. Alternatively, a letter of credit can be subscribed to fulfill solvency deficit payments.

In November 2021, the OSFI issued a revised instruction guide for the Preparation of Actuarial Reports for Defined Benefit Pension Plans ("Guide") that was used for the December 31, 2021 actuarial valuations. The revised Guide did not have a significant impact on the solvency status of the Company's defined benefit pension plans, and did not trigger additional pension contributions in 2022.

The Company's most recently filed actuarial valuations for funding purposes for its Canadian registered defined benefit pension plans conducted as at December 31, 2021 indicated a funding excess on a going concern basis of approximately \$4.2 billion and a funding excess on a solvency basis of approximately \$1.1 billion calculated using the three-year average of the plans' hypothetical wind-up ratio.

Pension contributions for the six months ended June 30, 2022 and 2021 of \$45 million and \$84 million, respectively, primarily represent contributions to the CN Pension Plan for the current service cost as determined under the Company's applicable actuarial valuations for funding purposes. Based on the results of the December 31, 2021 valuations, the CN Pension Plan is fully funded and at a level such that the Company was prohibited from making contributions to the CN Pension Plan as of April 2022 once the actuarial valuation report was filed. In 2022, the Company expects to make total cash contributions of approximately \$70 million for all of the Company's pension plans.

Adverse changes to the assumptions used to calculate the Company's funding status, particularly the discount rate, as well as changes to existing federal pension legislation or regulator guidance could significantly impact the Company's future pension contributions.

Additional information relating to the pension plans is provided in *Note 17 – Pensions and other postretirement benefits* to the Company's 2021 Annual Consolidated Financial Statements.

Income tax payments

Net income tax payments for the six months ended June 30, 2022 and 2021 were \$690 million and \$381 million, respectively. The increase was mostly due to higher required installment payments in Canada and in the U.S. mainly caused by the merger termination fee recorded in 2021 and higher pre-tax income. For 2022, the Company's net income tax payments are expected to be approximately \$1.25 billion.

Investing activities

Net cash used in investing activities decreased by \$926 million in the second quarter of 2022 and by \$1,238 million in the first half of 2022 when compared to the same period in 2021, mainly due to the advance to KCS and other transaction costs in 2021 and lower property additions. In addition, the decrease in the first half was also partly due to the proceeds received from the assets held for sale.

Management's Discussion and Analysis

Property additions

The following table provides the property additions for the three and six months ended June 30, 2022 and 2021:

<i>In millions</i>	Three months ended June 30		Six months ended June 30	
	2022	2021	2022	2021
Track and roadway	\$ 454	\$ 520	\$ 646	\$ 760
Rolling stock	159	108	240	183
Buildings	13	11	20	20
Information technology	67	64	131	114
Other	14	26	49	64
Property additions	\$ 707	\$ 729	\$ 1,086	\$ 1,141

2022 Capital expenditure program

For 2022, the Company continues to expect to invest approximately 17% of revenues in its capital program, which will be financed with cash generated from operations or with cash from financing activities as required.

Financing activities

Net cash used in financing activities increased by \$1,238 million in the second quarter of 2022 and increased by \$1,411 million in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was primarily driven by higher repurchases of common shares and higher repayments of commercial paper. The increase in the first half was primarily due to higher repurchases of common shares and lower issuance of debt; partly offset by higher issuance of commercial paper.

Debt financing activities

Debt financing activities in the first half of 2022 included the following:

- Net issuance of commercial paper of \$686 million in the second quarter and \$1,706 in the first half.

Debt financing activities in the first half of 2021 included the following:

- On March 31, 2021, issuance of US\$310 million (\$389 million) equipment loan under the non-revolving credit facility;
- On January 18, 2021, early redemption of \$250 million 2.75% Notes due 2021; and
- Net issuance of commercial paper of \$903 million in the second quarter and \$916 million in the first half.

Additional information relating to the Company's outstanding debt securities is provided in *Note 15 – Debt* to the Company's 2021 Annual Consolidated Financial Statements.

Repurchase of common shares

The Company may repurchase its common shares pursuant to a Normal Course Issuer Bid (NCIB) at prevailing market prices plus brokerage fees, or such other prices as may be permitted by the Toronto Stock Exchange. Under its current NCIB, the Company may repurchase up to 42.0 million common shares between February 1, 2022 and January 31, 2023. As at June 30, 2022, the Company had repurchased 15.2 million common shares for \$2,348 million under its current NCIB.

The Company repurchased 11.1 million common shares under its previous NCIB effective between February 1, 2021 and January 31, 2022, which allowed for the repurchase of up to 14.0 million common shares.

The following table provides the information related to the share repurchases for the three and six months ended June 30, 2022 and 2021:

<i>In millions, except per share data</i>	Three months ended June 30		Six months ended June 30	
	2022	2021	2022	2021
Number of common shares repurchased	7.8	0.8	16.0	2.9
Weighted-average price per share ⁽¹⁾	\$ 149.16	\$ 143.80	\$ 153.95	\$ 141.61
Amount of repurchase ⁽¹⁾⁽²⁾	\$ 1,173	\$ 123	\$ 2,466	\$ 414

(1) Includes brokerage fees.

(2) Includes settlements in subsequent periods.

Management's Discussion and Analysis

Dividends paid

The Company paid quarterly dividends of \$0.7325 per share amounting to \$504 million and \$1,013 million in the second quarter and first half of 2022 compared to \$436 million and \$872 million, respectively, at the quarterly rate of \$0.6150 per share for the same periods in 2021.

Contractual obligations

In the normal course of business, the Company incurs contractual obligations. The following table sets forth the Company's contractual obligations for the following items as at June 30, 2022:

<i>In millions</i>	Total	2022	2023	2024	2025	2026	2027 & thereafter
Debt obligations ⁽¹⁾	\$ 14,369	\$ 2,233	\$ 227	\$ 484	\$ 386	\$ 680	\$ 10,359
Interest on debt obligations	9,234	258	500	492	478	459	7,047
Finance lease obligations	3	—	1	—	—	2	—
Operating lease obligations ⁽²⁾	459	62	106	78	64	43	106
Purchase obligations ⁽³⁾	2,270	1,724	313	116	111	1	5
Other long-term liabilities ⁽⁴⁾	611	56	51	41	42	30	391
Total contractual obligations	\$ 26,946	\$ 4,333	\$ 1,198	\$ 1,211	\$ 1,081	\$ 1,215	\$ 17,908

(1) Presented net of unamortized discounts and debt issuance costs and excludes finance lease obligations.

(2) Includes \$70 million related to renewal options reasonably certain to be exercised and \$40 million of imputed interest.

(3) Includes fixed and variable commitments for information technology services and licenses, railroad cars, locomotives, wheels, rail, engineering services, rail ties as well as other equipment and services. Costs of variable commitments were estimated using forecasted prices and volumes.

(4) Includes expected payments for workers' compensation, postretirement benefits other than pensions, net unrecognized tax benefits, environmental liabilities and pension obligations that have been classified as contractual settlement agreements.

Management's Discussion and Analysis

Adjusted debt-to-adjusted EBITDA multiple

Management believes that the adjusted debt-to-adjusted EBITDA multiple is a useful credit measure because it reflects the Company's ability to service its debt and other long-term obligations. The Company calculates the adjusted debt-to-adjusted EBITDA multiple as adjusted debt divided by the last twelve months of adjusted EBITDA. Adjusted debt is defined as the sum of Long-term debt and Current portion of long-term debt as reported on the Company's Consolidated Balance Sheets as well as Operating lease liabilities, including current portion and pension plans in deficiency recognized on the Company's Consolidated Balance Sheets due to the debt-like nature of their contractual and financial obligations. Adjusted EBITDA is calculated as Net income excluding Interest expense, Income tax expense, Depreciation and amortization, operating lease cost, Other components of net periodic benefit income, Other income (loss), and other significant items that are not reflective of CN's underlying business operations and which could distort the analysis of trends in business performance. Adjusted debt and adjusted EBITDA are non-GAAP measures used to compute the Adjusted debt-to-adjusted EBITDA multiple. These measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

The following table provides a reconciliation of debt and Net income in accordance with GAAP, reported as at and for the twelve months ended June 30, 2022 and 2021, to the adjusted measures presented herein, which have been used to calculate the non-GAAP adjusted debt-to-adjusted EBITDA multiple:

<i>In millions, unless otherwise indicated</i>	<i>As at and for the twelve months ended June 30,</i>		2022	2021
Debt		\$	14,372	\$ 13,719
<i>Adjustments:</i>				
Operating lease liabilities, including current portion ⁽¹⁾			419	379
Pension plans in deficiency ⁽²⁾			443	545
Adjusted debt		\$	15,234	\$ 14,643
Net income ⁽³⁾		\$	5,130	\$ 4,010
Interest expense			576	559
Income tax expense ⁽³⁾			1,512	1,308
Depreciation and amortization			1,631	1,603
Operating lease cost ⁽⁴⁾			135	135
Other components of net periodic benefit income ⁽³⁾			(459)	(343)
Other loss (income)			30	(48)
<i>Adjustments:</i>				
Workforce reduction program ⁽⁵⁾			39	—
Advisory fees related to shareholder matters ⁽⁶⁾			42	—
Recovery of loss on assets held for sale ⁽⁷⁾			—	(137)
Transaction-related costs ⁽⁸⁾			84	—
Merger termination fee ⁽⁹⁾			(886)	—
Adjusted EBITDA		\$	7,834	\$ 7,087
Adjusted debt-to-adjusted EBITDA multiple (times)			1.94	2.07

(1) Represents the present value of operating lease payments.

(2) Represents the total funded deficit of all defined benefit pension plans with a projected benefit obligation in excess of plan assets.

(3) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

(4) Represents the operating lease costs recorded in Purchased services and material and Equipment rents within the Consolidated Statements of Income.

(5) Relates to employee termination benefits and severance costs related to a workforce reduction program, recorded in Labor and fringe benefits within the Consolidated Statements of Income.

(6) Relates to advisory fees related to shareholder matters recorded in Casualty and other within the Consolidated Statements of Income.

(7) Relates to the recovery of \$137 million of the \$486 million loss on assets held for sale recorded in the second quarter of 2020, resulting from the Company entering into an agreement for the sale of non-core lines. See Note 6 – Assets held for sale to the Company's unaudited Interim Consolidated Financial Statements for further information.

(8) Relates to transaction costs incurred as a result of the terminated CN Merger Agreement of \$84 million, consisting of \$125 million of transaction-related costs, partially offset by \$41 million of income generated as a result of the applicable foreign exchange rates prevailing at the time of payment and related receipt of the US\$700 million advance to KCS. See Note 4 – Acquisitions to the Company's unaudited Interim Consolidated Financial Statements for further information.

(9) Relates to the termination fee resulting from KCS terminating the CN Merger Agreement and entering into a merger agreement with CP. See Note 4 – Acquisitions to the Company's unaudited Interim Consolidated Financial Statements for further information.

All forward-looking statements discussed in this section are subject to risks and uncertainties and are based on assumptions about events and developments that may not materialize or that may be offset entirely or partially by other events and developments. See the section of this MD&A entitled *Forward-looking statements* for a discussion of assumptions and risk factors affecting such forward-looking statements.

Management's Discussion and Analysis

Off balance sheet arrangements

Guarantees and indemnifications

In the normal course of business, the Company enters into agreements that may involve providing guarantees or indemnifications to third parties and others, which may extend beyond the term of the agreements. These include, but are not limited to, standby letters of credit, surety and other bonds, and indemnifications that are customary for the type of transaction or for the railway business. As at June 30, 2022, the Company has not recorded a liability with respect to guarantees and indemnifications. Additional information relating to guarantees and indemnifications is provided in *Note 13 – Major commitments and contingencies* to the Company's unaudited Interim Consolidated Financial Statements.

Outstanding share data

As at July 26, 2022, the Company had 683.4 million common shares and 3.7 million stock options outstanding.

Financial instruments

Risk management

In the normal course of business, the Company is exposed to various risks from its use of financial instruments, such as credit risk, liquidity risk, and market risks which include foreign currency risk, interest rate risk and commodity price risk. A description of these risks and how the Company manages them, is provided in the section entitled *Financial instruments* of the Company's 2021 Annual MD&A.

Derivative financial instruments

Foreign currency risk

As at June 30, 2022, the Company had outstanding foreign exchange forward contracts with a notional value of US\$1,732 million (US\$910 million as at December 31, 2021) at a weighted-average exchange rate of \$1.27 per US\$1.00 (\$1.27 per US\$1.00 as at December 31, 2021) for a weighted-average term of 134 days (251 days as at December 31, 2021). For the three and six months ended June 30, 2022, the Company recorded gains of \$60 million and \$36 million, respectively, related to foreign exchange forward contracts compared to losses of \$13 million and \$26 million, respectively, for the same periods in 2021. These gains were largely offset by the re-measurement of US dollar-denominated monetary assets and liabilities recorded in Other income.

As at June 30, 2022, the fair value of outstanding foreign exchange forward contracts included in Other current assets and Accounts payable and other was \$26 million and \$4 million, respectively (\$nil and \$2 million, respectively, as at December 31, 2021).

Interest rate risk

As at June 30, 2022, the aggregate notional amount of treasury lock agreements entered into was US\$550 million to hedge US Treasury benchmark rates related to an expected debt issuance in 2022. The treasury locks are designated as cash flow hedging instruments. As at June 30, 2022, the fair value of outstanding treasury lock agreements included in Other current assets and Accounts payable and other was \$26 million and \$1 million, respectively.

Fair value of financial instruments

As at June 30, 2022, the Company's debt, excluding finance leases, had a carrying amount of \$14,369 million (\$12,475 million as at December 31, 2021) and a fair value of \$13,672 million (\$14,424 million as at December 31, 2021).

Additional information relating to financial instruments is provided in *Note 14 – Financial instruments* to the Company's unaudited Interim Consolidated Financial Statements.

Management's Discussion and Analysis

Recent accounting pronouncements

The following recent Accounting Standards Update (ASU) issued by the Financial Accounting Standards Board (FASB) has an effective date after June 30, 2022 and has not been adopted by the Company:

ASU 2021-10 Disclosures by business entities about government assistance (Topic 832)

The ASU will increase the transparency of government assistance including the disclosure of types of assistance, an entity's accounting for the assistance, and the effect of the assistance on an entity's financial statements.

The ASU is effective for annual periods beginning after December 15, 2021. Early adoption is permitted.

The Company is currently evaluating whether the amendment will have a significant impact on the Company's Consolidated Financial Statement disclosures.

The following recent ASU issued by the FASB came into effect in 2020, was amended in 2021 and has not been adopted by the Company:

ASU 2020-04 Reference rate reform (Topic 848): Facilitation of the effects of reference rate reform on financial reporting and related amendments

USD London Interbank Offered Rate (LIBOR) and Canadian Dollar Offered Rate (CDOR) are benchmark interest rates referenced in a variety of agreements. The administrators of LIBOR and CDOR have ceased the publication of certain LIBOR and CDOR rates in January 2022 and May 2021, respectively, and intend to discontinue the remaining LIBOR and CDOR rates on June 30, 2023 and June 30, 2024, respectively.

The ASU provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include contract modifications, hedging relationships, and sale or transfer of debt securities classified as held-to-maturity.

The ASU was effective starting on March 12, 2020, and is available to be adopted on a prospective basis no later than December 31, 2022. The Company has a non-revolving credit facility that references LIBOR and CDOR. As at June 30, 2022, the Company has equipment loans made under the non-revolving credit facility referencing LIBOR with outstanding borrowings of US\$557 million. The equipment loans would be affected by the provisions of this ASU and were not impacted by the administrator of LIBOR ceasing publication of certain LIBOR rates. The Company also has revolving credit facilities that reference CDOR and an accounts receivable securitization program that references LIBOR and CDOR, see *Note 9 – Financing activities* to the Company's unaudited Interim Consolidated Financial Statements. The Company had no outstanding borrowing under these credit facilities or the accounts receivable securitization program as at June 30, 2022. Within all of these agreements, the Company has fallback language that allows for the succession of an alternative reference rate. The Company is evaluating the effects that the adoption of the ASU will have on its Consolidated Financial Statements and related disclosures, and whether it will elect to apply any of the optional expedients and exceptions provided in the ASU.

Other recently issued ASUs required to be applied on or after June 30, 2022 have been evaluated by the Company and are not expected to have a significant impact on the Company's Consolidated Financial Statements.

Critical accounting estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates, judgments and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent assets and liabilities at the date of the financial statements. On an ongoing basis, management reviews its estimates based upon available information. Actual results could differ from these estimates. The Company's policies for income taxes, capital expenditures, depreciation, pensions and other postretirement benefits, personal injury and other claims, and environmental matters, require management's more significant judgments and estimates in the preparation of the Company's consolidated financial statements and, as such, are considered to be critical. Reference is made to the section entitled *Critical accounting estimates* of the Company's 2021 Annual MD&A for a detailed description of the Company's critical accounting estimates. There have not been any material changes to these estimates in the first half of 2022, other than the change in accounting policy for determining net periodic pension cost (income) disclosed below.

Management discusses the development and selection of the Company's critical accounting policies, including the underlying estimates and assumptions, with the Audit, Finance and Risk Committee of the Company's Board of Directors. The Audit, Finance and Risk Committee has reviewed the Company's related disclosures.

Management's Discussion and Analysis

Pensions

Effective January 1, 2022, CN elected to change its accounting methodology for determining the market-related value of assets for the Company's defined benefit pension plans. The new accounting method changes the calculation of market-related value of pension plan assets used to determine net periodic benefit cost but has no impact on the annual funded status of the plans. The Company's previous methodology calculated market-related value for pensions whereby realized and unrealized gains/losses and appreciation/depreciation in the value of the investments were recognized over a period of five years. The Company's new methodology will apply a corridor approach so that the market-related value does not result in a value that deviates excessively from its fair value. Specifically, the market-related value will not exceed 110% or be less than 90% of the fair value. This change establishes a corridor approach whereby the amount causing the market-related value to be outside of the 10% corridor will be recognized immediately in the market-related value of assets and will not be subject to the five year period of recognition. There is no change in the recognition approach for investment income.

CN considers the use of a calculated value with a corridor approach preferable to the previous calculated value approach as it results in a more current reflection of impacts of changes in value of these plan assets in the determination of net periodic benefit cost. The new accounting method to calculate the market-related value for pensions also aligns with the prevailing guidance issued by the Office of the Superintendent of Financial Institutions (OSFI) for the preparation of actuarial valuations for funding purposes for all registered Canadian defined benefit pension plans, whereby the Company has adopted and applied the updated OSFI guidance starting with the December 31, 2021 funding valuations that were filed during the second quarter of 2022.

The change in accounting method was applied retrospectively to all periods presented within CN's financial statements. The change did not impact Operating income or Net cash provided by operating activities but did impact the previously reported portion of Other components of net periodic benefit cost (income) for defined benefit pension plans along with related consolidated income items such as Net income and Earnings per share. Other impacts included related changes to previously reported consolidated Other comprehensive income (loss), Retained earnings, Accumulated other comprehensive income (loss), and associated line items within the determination of Net cash provided (used) by operating activities.

Business risks

In the normal course of business, the Company is exposed to various business risks and uncertainties that can have an effect on the Company's results of operations, financial position, or liquidity. While some exposures may be reduced by the Company's risk management strategies, many risks are driven by external factors beyond the Company's control or are of a nature which cannot be eliminated.

Reference is made to the section entitled *Business risks* of the Company's 2021 Annual MD&A for a detailed description of such key areas of business risks and uncertainties with respect to: Pandemic risk and economic downturn, Competition, Environmental matters, Personal injury and other legal claims, Labor negotiations, Regulation, Economic conditions, Pension funding volatility, Reliance on technology and related cybersecurity risk, Trade restrictions, Terrorism and international conflicts, Customer credit risk, Liquidity, Supplier concentration, Availability of qualified personnel, Fuel costs, Foreign exchange, Interest rates, Transportation network disruptions, Severe weather and Climate change, which is incorporated herein by reference. Additional risks and uncertainties not currently known to management, or that may currently not be considered material by management, could nevertheless also have an adverse effect on the Company's business.

The following are certain changes to the risks described in the Company's 2021 Annual MD&A, as well as an update on competition, the labor workforce and negotiations, regulatory matters and fuel costs.

Competition

CP-KCS merger agreement

On February 28, 2022, CN filed a responsive application with the Surface Transportation Board (STB) requesting the STB to condition any approval of a CP-KCS merger on the divestiture of the KCS line from Kansas City, Missouri to Springfield and East St. Louis, Illinois ("the Kansas City Speedway") to CN, pursuant to the STB's statutory authority to order "the divestiture of parallel tracks" as a merger condition. Granting CN control of the line will provide customers with a new competitive option to move goods across a key North American economic corridor. On March 16, 2022, the STB suspended the procedural schedule until further notice in order for Applicants to explain an "apparent inconsistency" in baseline 2019 tonnage data presented by the Applicants. On April 27, 2022, the STB required Applicants to amend their operating plan and required parties to submit amended comments and responsive applications. On May 27, 2022, the STB issued a revised procedural schedule. On June 9, 2022, the Company submitted comments on Applicants' amended operating plan, and the Company submitted an amended operating plan in support of the divestiture of the Kansas City Speedway. On July 1, 2022, the STB accepted the Company's responsive application for consideration and consolidated the Company's divestiture request with the primary application. On July 12, 2022, the Company

Management's Discussion and Analysis

submitted reply comments, and parties of record submitted reply comments to the Company's proposed divestiture of the Kansas City Speedway. On July 22, 2022, the Board scheduled a 3-day hearing for September 28 to 30, 2022.

There can be no assurance that the Company will be able to compete effectively against current and future competitors in the transportation industry, or that further consolidation within the transportation industry, including consolidation arising from the CP-KCS merger, if approved, and legislation allowing for more leniency in size and weight for motor carriers will not adversely affect the Company's competitive position. No assurance can be given that competitive pressures will not lead to reduced revenues, profit margins or both.

Labor workforce and negotiations

As at June 30, 2022, CN employed a total of 16,228 employees in Canada, of which 11,702, or 72%, were unionized employees, and 6,555 employees in the U.S., of which 5,531, or 84%, were unionized employees. The Canadian employee count does not include approximately 700 International Brotherhood of Electrical Workers (IBEW) on strike as at June 30, 2022. The Company's relationships with its unionized workforce are governed by, amongst other items, collective bargaining agreements which are negotiated from time to time. Disputes relating to the renewal of collective bargaining agreements could potentially result in strikes, slowdowns and loss of business. Future labor agreements or renegotiated agreements could increase labor and fringe benefits and related expenses. There can be no assurance that the Company will be able to renew and have its collective bargaining agreements ratified without any strikes or lockouts or that the resolution of these collective bargaining negotiations will not have a material adverse effect on the Company's results of operations or financial position.

Canadian workforce

On September 13, 2021, the Company served notice to commence bargaining for the renewal of the collective agreement with the IBEW governing approximately 700 signals and communications workers, which expired on December 31, 2021. After six months of bargaining, the IBEW served notice of impasse with the Minister of Labor which commences the conciliation/mediation process under the Canada Labor Code. On June 15, 2022, the IBEW gave a 72-hour notice of its intention to strike and on June 18, 2022 the IBEW commenced their strike. On July 4, 2022, the IBEW agreed to binding arbitration, bringing the strike to an end. The collective agreement remains in effect until the arbitrator awards the new contract.

On December 1, 2021, CN filed an application with the Canadian Industrial Relations Board (CIRB) pursuant to Section 18.1 of the Canada Labor Code to review the current bargaining unit structure applicable to running trades on its Canadian railway. There are currently 12 bargaining units and 16 collective agreements covering Locomotive Engineers and Conductors. CN believes that this structure is no longer appropriate for labor relations. A consolidated unit of Locomotive Engineers and Conductors governed by one collective agreement will address these issues and would be a more appropriate bargaining unit structure. On April 7, 2022, CN and the Teamsters Canada Rail Conference (TCRC) agreed to enter into mediation on the resolution of the Company's application with the assistance of the CIRB. Mediation is ongoing.

On March 23, 2022, the TCRC served notice to commence bargaining for the renewal of the Conductor and Yard Coordinator collective agreement governing approximately 3,000 employees, which expires on July 22, 2022. In April 2022, CN filed a formal request with the CIRB requesting that the expiry date of the collective agreement be extended until the CIRB has rendered a decision on our application to conduct a bargaining unit review. Decision from the CIRB is pending the outcome of mediation on CN's Section 18.1 application.

U.S. workforce

Collective bargaining agreements covering all non-operating and operating craft employees at Grand Trunk Western Railroad Company (GTW), companies owned by Illinois Central Corporation (ICC), companies owned by Wisconsin Central Ltd. (WC) and Bessemer & Lake Erie Railroad Company (BLE), and all employees at Pittsburgh and Conneaut Dock Company (PCD) are in place. The agreements in place have various moratorium provisions, which preserve the status quo with respect to the applicable collective bargaining agreement during the terms of such moratoriums. Where negotiations are ongoing, the terms and conditions of existing agreements generally continue to apply until new agreements are reached or the processes of the Railway Labor Act have been exhausted.

The general approach to labor negotiations by U.S. Class I railroads is to bargain on a collective national basis with the industry, which GTW, ICC, WC and BLE currently participate in, for collective bargaining agreements covering all non-operating and operating employees, with the exception of two employee groups working at PCD covering in total fewer than 35 employees. National bargaining has reached the final dispute resolution processes as required under U.S. labor law (Railway Labor Act – "RLA"). On July 15, 2022, the President established a Presidential Emergency Board (PEB) that became effective on July 18, 2022. The PEB has 30 days after the effective date to issue a report with their recommendation for terms of a settlement. Upon receipt of the PEB report, a second 30-day cooling off period will commence.

Management's Discussion and Analysis

Regulation

Economic regulation - U.S.

The STB sought comments on a supplemental proposed rulemaking to establish a new rate case method for smaller cases known as Final Offer Rate Review that was originally proposed by the agency in 2019. The STB also sought comments on proposed rules for new voluntary alternative dispute resolution. Comments were submitted in the first quarter of 2022 in both proceedings.

On March 15 and 16, 2022, the STB held a public hearing concerning a proposal by the STB in 2016 to amend its regulations regarding reciprocal switching. Written testimony and post-hearing comments were submitted in February and April 2022. The STB members conducted additional meetings with stakeholders.

On August 8, 2019, the STB issued interim findings and guidance to National Railroad Passenger Corporation (Amtrak) and the Company regarding the terms and conditions for Amtrak's use of the Company's lines. On March 3, 2022, the STB issued a schedule for Amtrak and the Company to submit opening, reply, and rebuttal submissions on the remaining issues in the case. Opening and reply submissions were submitted in May and July 2022, and rebuttal submissions are due in August 2022.

On April 26 and April 27, 2022, the STB held a hearing on "Urgent Issues in Freight Rail Service". The STB required four Class I railroads to attend and invited three other Class I railroads, including the Company, to attend. On May 6, 2022, the STB required all Class I railroads to submit additional weekly service data and additional monthly employment data for six months. The STB also required certain Class I railroads to submit service recovery plans, but the Company is not required to do so.

On April 22, 2022, the STB proposed to revise its existing service emergency rules for rail shippers seeking a directed service order during a service emergency and propose accelerated process for acute service emergencies. Comments were submitted in May and June 2022.

No assurance can be given that these and any other current or future regulatory or legislative initiatives by the U.S. federal government and agencies will not materially adversely affect the Company's results of operations or its competitive and financial position.

Safety regulation - Canada

On March 10, 2021, the Minister issued two orders respecting railway uncontrolled movements. The first order imposes special interim procedures aimed at reducing the risks of uncontrolled movements. The second order requires the Canadian railway industry to revise existing rules to incorporate design and performance parameters for locomotives with roll-away protection, to develop a precise definition of attended versus unattended equipment as well as incorporate requirements on the use of roll-away protection to reduce the risks of an uncontrolled movement. In accordance with the second order, the Railway Association of Canada filed the requested revisions on March 10, 2022. The Minister approved the revised rules on May 9, 2022 and they will come into force on October 1, 2022.

On November 25, 2020, the Minister approved the new Duty and Rest Period Rules for Operating Employees subject to conditions clarifying some aspects of the Rules. In accordance with the new Rules, CN filed with Transport Canada on November 25, 2021, its Fatigue Management Plan containing an extensive set of prescriptive requirements for processes around scheduling, fitness for duty, deadheading, and other requirements of the new rules. The other provisions of the Rules applicable to CN will come into effect on May 25, 2023. On March 11, 2022, Transport Canada opened pre-consultations on proposed Fatigue Management System Regulations.

On April 1, 2022, the Railway Association of Canada filed with Transport Canada revisions to the Rules Respecting Track Safety. The revisions include requirements to make available to Transport Canada railway track standards and for the confidential treatment of technical sensitive information provided by railway companies. The revisions also provide for the development of a plan for selecting, defining and analyzing key performance indicators; new requirement for crossties and new inspection requirements for Class 1 track where occupied passenger trains are operated. These revisions were approved by the Minister on May 31, 2022 and they will come into force on May 31, 2023.

On July 9 and 11, 2021, Transport Canada issued orders pursuant to the Railway Safety Act in response to wildfires in British Columbia. In addition to requiring the implementation of specific measures aimed at reducing the risk of fires and improving their detection, the Order directed railway companies to complete and implement a Final Extreme Weather Fire Risk Mitigation Plan ("Final Plan") within 60 days following the issuance of these orders. In accordance with this requirement, CN filed its proposed Final Plan on September 9, 2021. On October 14, 2021, the Transportation Safety Board confirmed that its investigation of the Lytton fire had not revealed any evidence to link railway operations to the fire. On June 15, 2022, the Minister approved the *Railway Extreme Heat and Fire Risk Mitigation Rules* requiring railway companies to reduce speed and conduct additional track inspections when temperatures are high, inspect locomotive exhaust systems more frequently, and implement a fire risk reduction plan.

Transport Canada issued an order effective October 30, 2021 requiring employers in the federally regulated rail sectors to either establish mandatory vaccination policies for all employees in their organizations or require rail crew and track employees submit to rigorous testing protocols. Each railway that implements a mandatory vaccination policy must include a provision for employee attestation/declaration of their vaccination status; include a description of consequences for employees who do not comply or who falsify information; and meet standards consistent with the approach taken by the Government of Canada for the Core Public Administration. After November 15, 2021, each railway is

Management's Discussion and Analysis

required to guarantee employees have at least one shot of a COVID-19 vaccine or they will be unable to work. All employees were required to be fully vaccinated by January 24, 2022. On June 17, 2022, Transport Canada issued an order ending vaccination mandates for railway passengers and employees.

On July 25, 2022, the Minister issued an order requesting railway companies to revise the Railway Freight and Passenger Train Brake Inspection and Safety Rules to incorporate enhanced inspection requirements for the performance of air brakes, including in cold temperatures. The proposed revisions respecting air brake train tests must be filed by November 30, 2022 and those respecting test standards must be filed by May 31, 2023.

No assurance can be given that these and any other current or future regulatory or legislative initiatives by the Canadian federal government and agencies will not materially adversely affect the Company's results of operations or its competitive and financial position.

Safety regulation - U.S.

On February 18, 2020, the Federal Railroad Administration (FRA) issued a final rule that requires each Class I railroad and certain shortline railroads to develop a Railroad Risk Reduction Program in a written plan that will be reviewed and approved by the FRA and will be subject to audit. CN submitted its plan on August 16, 2021. Rail labor previously challenged aspects of the FRA rule in the United States Court of Appeals for the DC Circuit, including protection from discovery for information compiled by railroads for purposes of implementing the rule. On August 20, 2021, the United States Court of Appeals for the DC Circuit denied the challenge filed by rail labor to the FRA's final rule concerning the risk reduction programs. In November 2021, the FRA denied the Class I risk reduction program plans with comments. CN submitted its revised plan on February 7, 2022 and made further revisions in response to comments from the FRA on March 25, 2022. On July 7, 2022, the FRA approved the Company's risk reduction program plan.

The U.S. government previously announced that it intended to impose vaccine mandates on (1) government contractors and (2) all private sector employers with 100 or more employees. As to government contractors, the Biden Administration issued Executive Order 14042 called "Ensuring Adequate COVID-19 Safety Protocols for Federal Contractors." The Executive Order required federal government contractors and others doing business with federal contractors to require vaccination of their employees. The contractor mandate was originally scheduled to go into effect on January 10, 2022. However, a federal court enjoined the contractor mandate on a nationwide basis. Requests to stay the injunction pending appeal were denied. The Eleventh Circuit Court of Appeals held oral argument on the validity of the contractor mandate on April 8, 2022. The case remains pending. For private sector employers, the Occupational Safety and Health Administration (OSHA) issued an emergency temporary standard (ETS) requiring employers with 100 or more employees to mandate vaccination. After a decision by the United States Supreme Court, OSHA withdrew the ETS.

On March 1, 2021, the FRA implemented an emergency order governing the use of face masks in railroad operations. On April 19, 2022, the FRA announced that it will not enforce its face mask emergency order at this time in light of the court decision concerning the Centers for Disease Control and Prevention (CDC) transportation mask order.

The FRA issued a final rule requiring Class I and other railroads to submit fatigue risk management program plans to the FRA for approval. The plans are due by July 13, 2023. Railroads have 36 months to implement their plans after the FRA approves the plans.

No assurance can be given that these and any other current or future regulatory or legislative initiatives by the U.S. federal government and agencies will not materially adversely affect the Company's results of operations or its competitive and financial position.

Fuel costs and supply disruptions

The Company is susceptible to the volatility of fuel prices due to changes in the economy or supply disruptions. Rapid rises in fuel prices, such as those experienced in the first half of 2022, or fuel supply disruptions can occur due to refinery disruptions, production quota restrictions, climate, as well as labor and political instability such as the ongoing Russia-Ukraine conflict. Increases in fuel prices or supply disruptions may materially adversely affect the Company's results of operations, financial position or liquidity.

Management's Discussion and Analysis

Controls and procedures

The Company's Chief Executive Officer and its Chief Financial Officer, after evaluating the effectiveness of the Company's disclosure controls and procedures (as defined in *Exchange Act* Rules 13a-15(e) and 15d-15(e)) as of June 30, 2022, have concluded that the Company's disclosure controls and procedures were effective.

During the second quarter ended June 30, 2022, there were no changes in the Company's internal control over financial reporting (as defined in *Exchange Act* Rules 13a-15(f) and 15d-15(f)) that materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.