Railway Association
of Canada

RAC QUARTERLY REPORT Q4-2022

February 17, 2023

Contents

Introduction

The Railway Association of Canada's (RAC) Quarterly Report compiles weekly, monthly, and quarterly data from railways and various statistical and regulatory agencies to provide a timely update on the state of the economy, the transportation sector, and freight and passenger rail operations.[1] Links to all data sources are included throughout the report. In addition, RAC's quarterly and annual reports can be accessed on the [RAC website](#).

Executive Summary

Freight Rail

In the fourth quarter of 2022, Class 1 freight traffic (CN and CP, network-wide), measured using revenue-ton miles (RTMs), was up by 7% compared to the same period last year. Carloads, RTMs, and freight revenues were up for most commodities. Two commodities experienced double-digit year-over-year RTM growth, including grain & fertilizers (+21%) and automotive (+17%). In terms of performance, five out of ten key financial and operating metrics improved compared to Q4-21, one metric remained unchanged, while four worsened (see pages 11-12 for details).

Looking at supply chains, global container prices have come down significantly from record highs and marine vessel delays and on-time performance continued to improve throughout 2022. Following a stretch of long average dwell times at Canadian ports throughout the first 9 months of the year, Q4-22 dwell times (5.7 days at the Port of Vancouver and 4.1 days at the Port of Montreal) were similar to those experienced in Q4-21. Railway dwell times averaged 7.6 hours in Q4, which is consistent with historical performance and not a source of any significant deterioration in Canada's supply chain efficiency.

High fuel costs have contributed to inflation and have impacted transportation costs. The latest month of comparable data for rail and truck freight rates – September 2022 – indicates that, since the onset of the pandemic, trucking prices have increased at a more rapid pace than rail freight rates.

On a year-to-date basis (January-November), the number of non-intermodal carloads originated by Canadian railways (including shortlines) was flat compared to 2021, while intermodal units declined by 1%.Trade by rail has remained strong and above 2021 levels in each month this year (January through November). The number of covered hopper cars unloaded at western ports was very low through the first eight months of 2022 (50% below the previous three-year average) due to a poor harvest in the 2021-2022 crop year. A turnaround occurred in September, when the number of covered hopper cars unloaded at Western Ports more than doubled, followed by additional gains in October and November – on the strength of a good grain harvest and highly successful shipping season.

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[1] Much of the 2022 data in this report are measured against the same period in 2021, for year-over-year comparisons' sake. However, in some cases, 2022 data are compared to earlier periods to provide context relative to pre-pandemic activity levels.

Passenger Rail

The passenger rail sector continued to recover in Q4-22 but still has a long way to go before returning to pre-pandemic ridership levels. Compared to Q4-19 (pre-pandemic), three RAC members reported an increase in ridership, while ridership for the other five reporting memberships remained below pre-pandemic levels. On a YTD basis, 2022 ridership remained below 2019 levels for all eight reporting members.

Following strong growth from January through September 2022 - urban transit ridership has leveled off at around 29% below pre-pandemic levels (as of November 2022). Intercity passenger rail ridership continued to climb. In the most recent quarters of available data, ridership was higher than 2021 and 2020 levels but remained below 2019 levels. In Q3-22, the overall tourism sector continued to recover, with expenditures reaching 94% of their pre-pandemic (Q3-19) level. Tourism expenditures on passenger rail services exceeded its pre-pandemic (Q3-19) level by 12%.

Rail Safety

Accident data can vary significantly from quarter to quarter. In Q4-22, the Canadian Class 1 Federal Railroad Administration (FRA) personal injuries rate and train accident rate were 3% and 5% lower than in Q4-21, respectively (*see Federal Railroad Administration Safety Data*). Looking at Transportation Safety Board (TSB) data, rail safety performance was generally unfavourable in Q4-22. Through a working group, the RAC and TSB continue to work together to improve the quality and accuracy of the TSB data.

State of the Canadian Economy

December 2022 data are not yet publicly available for all of the key economic indicators. As such, November 2022 data are compared against August 2022 to analyze recent trends.

From August to November 2022, overall employment increased by 0.7% (139,500 jobs), from 19.53 million to 19.67 million.

From August to November 2022, GDP increased by 0.4%, from $2,069B to $2,077B. Despite accounting for just 4.1% of total GDP, the transportation & warehousing sector, which grew by 2.9% from August to November, contributed more than any other sector to Canada's total GDP growth. Much of the growth in the transportation & warehousing sector came from the recovery of the air transportation sector (see *Rail and Other Modes of Freight Transportation*).

Trade (exports + imports) was the only key economic indicator that decreased from August to November, shrinking by 2.1%, from $129.4B to $126.6B. The decrease was largely driven by reductions in exports of energy products.

Domestic retail sales provide insight into household consumption, which is the largest contributor to Canada's GDP at over 50% of total GDP and a key driver of intermodal rail volumes. In November 2022, retail sales were 0.6% above August 2022 levels. During this time period, consumer prices for goods increased by 1.3% – indicating that *real* retail sales (retail sales at constant prices) may have decreased.

Manufacturing shipments provide an indication into the strength of Canada's manufacturing sector and the global demand for its outputs. Manufacturing shipments increased by 2.6% from August to November 2022.

Growth of Key Canadian Economic Indicators

	Employment (millions)	GDP ($B, annualized)	Exports + Imports ($B)	Retail Sales ($B)	Manufacturing Shipments ($B)
August 2022	19.53	2,069	129.4	61.4	70.5
November 2022	19.67	2,077	126.6	61.8	72.3
3-month change	**0.7%**	**0.4%**	**-2.1%**	**0.6%**	**2.6%**

Key Canadian Economic Indicators
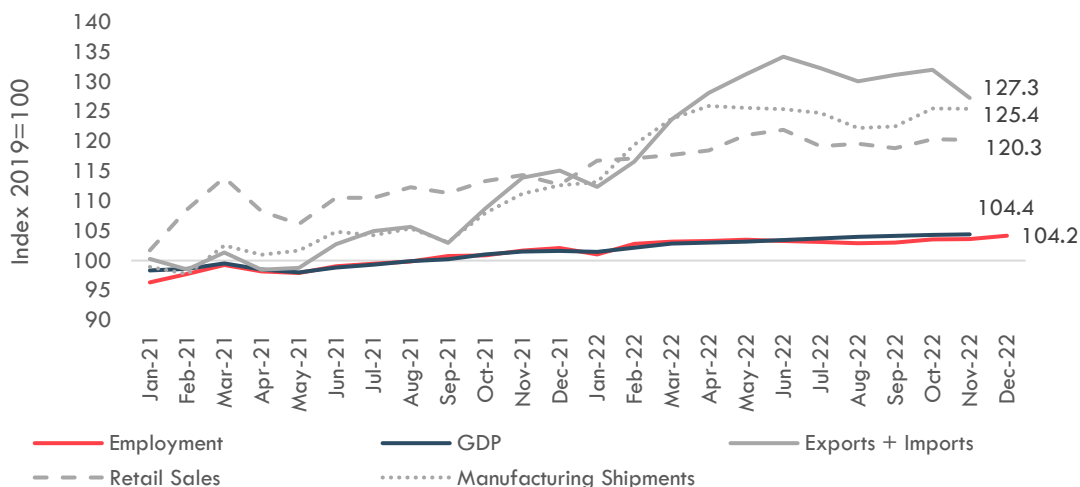
Source: Statistics Canada, Labour Force Survey; Gross domestic product at basic prices; Canadian International Merchandise Trade; Retail trade sales by industry; and Monthly Survey of Manufacturing
*Note: Data are seasonally adjusted. The GDP index Is an index of Real GDP in chained (2012) dollars. The indices for trade, retail sales, and manufacturing shipments are in nominal dollars.*

Economic Outlook

After a strong 2022-Q3, Canada's major banks are forecasting weak growth in 2022-Q4 and 2023-Q1, followed by a potential for recession lasting the second and third quarters of 2023, for both Canada and the U.S.

The 2023 outlook for rail varies by commodity. Expectations remain strong for bulk commodities, including grain, potash and coal.

Canadian and U.S. Real GDP Forecast
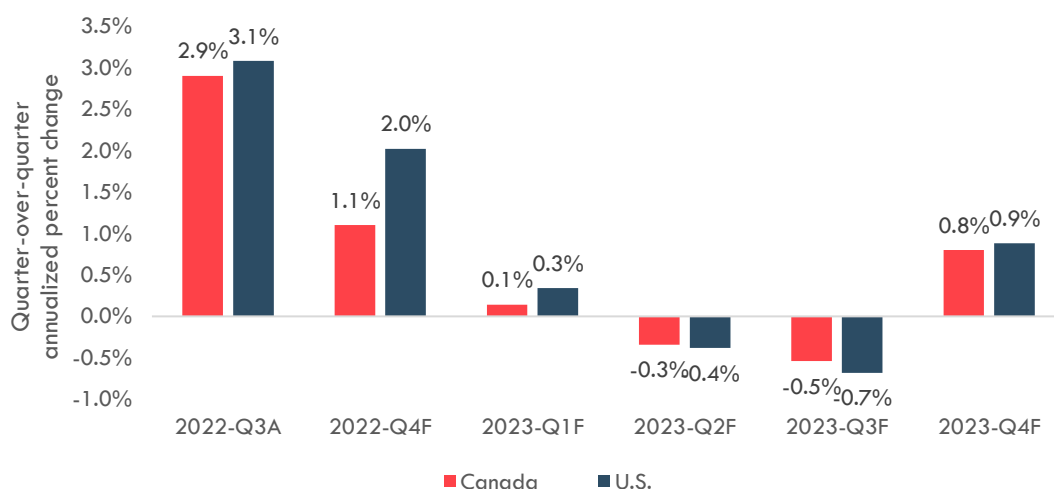
Source: TD, Scotiabank, CIBC, RBC, and BMO forecasts. The figures presented are the average of the five banks' latest forecasts.
*Note: "A" indicates actuals and "F" indicates forecasts.*

Rail and Other Modes of Freight Transportation

Each individual transportation sector has been impacted differently throughout the pandemic. The adverse impacts on some sectors were significant, especially for those that are more oriented toward passenger services, which affects the initial values used in year-over-year trend analysis. For example, travel restrictions significantly impacted air travel in 2021 – affecting the air transportation sector's GDP and employment levels. Passenger rail travel was also affected, but since freight activities account for a large share of total industry employment, GDP and trade, the year-over-year results for the overall rail sector are less affected. As such, the findings in this section should be interpreted with caution.

The air transportation sector experienced the most significant growth in GDP, with a 231% increase on a year-to-date (YTD) basis, bringing the air transportation sector's GDP up to 53% of its pre-pandemic level (January to November 2019). The air transportation sector's GDP has increased each month throughout 2022.

YTD GDP in all other transportation sectors was up compared to 2021: Water (+11%), pipeline (+3%), truck (+3%) and rail (+1%).
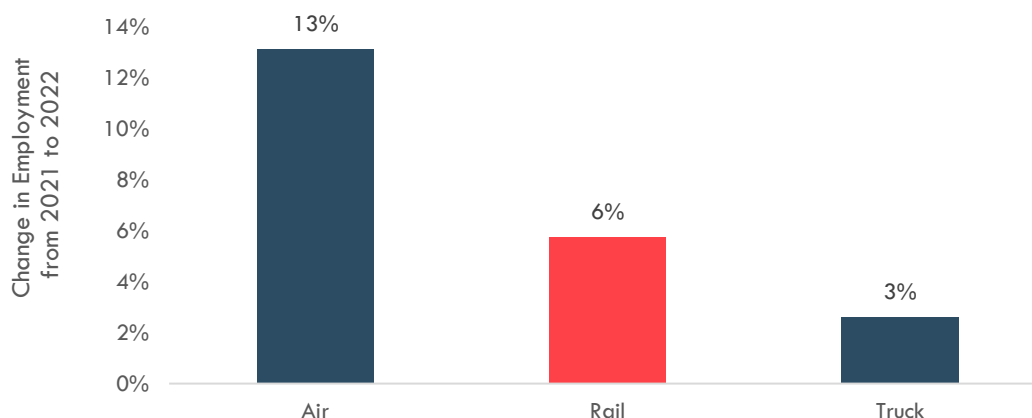
Modal Comparison of GDP (YTD Jan-Nov)
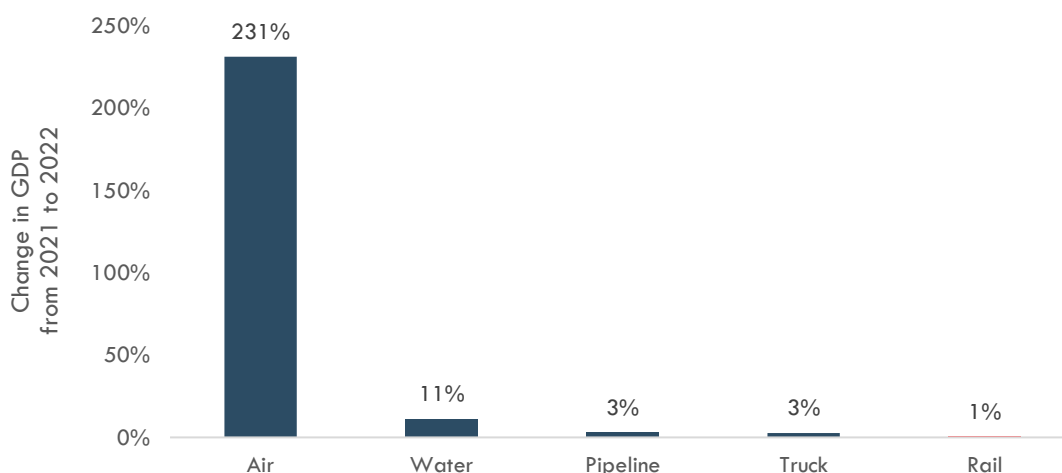
Source: Statistics Canada, Gross Domestic Product by Industry
Note: Data are seasonally adjusted.

YTD employment was up for all three transportation sectors for which data is available (air; rail; and truck).

Modal Comparison of Employment (YTD Jan-Nov)

Source: Statistics Canada, Survey of Employment, Payrolls and Hours
Note: The Survey of Employment, Payrolls and Hours does not provide information on employment for the marine or pipeline sectors.
Note: Data are seasonally adjusted.

Despite a small reduction in total trade volumes over the past few months, Canada's YTD (January-November) trade was up 23% compared to the same period in 2021. Aside from "other",[2] trade via the marine mode increased the most (24%), followed by rail (21%), road (17%), and air (14%).

Modal Comparison of Trade (YTD Jan-Nov)
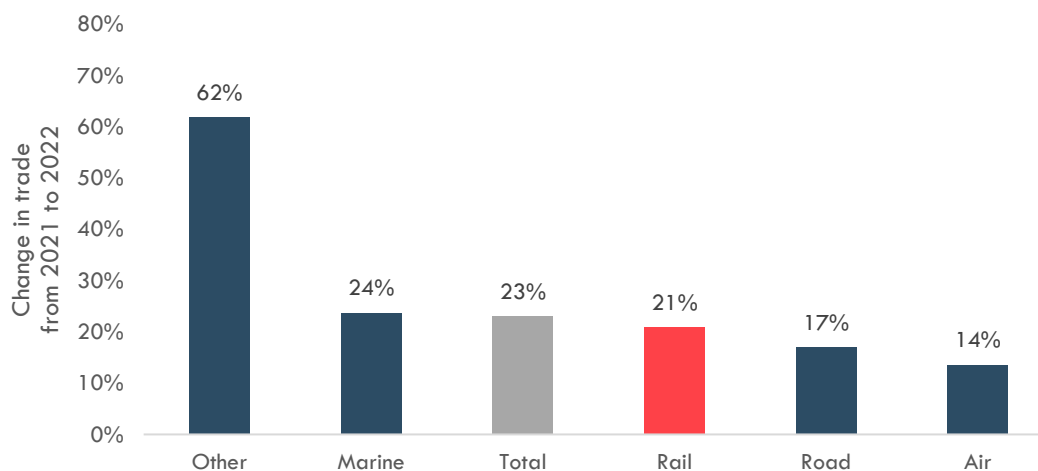
Source: Transport Canada, Transport Canada in brief

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[2] The data source does not provide a definition for "Other modes".

Class 1 Data

The Class 1 data cover CN and CP's network-wide operations across North America.

Weekly Trend

Class 1 Q4-22 revenue ton-miles (RTMs) were 7% above Q4-21 levels. 2022-Q4 started off strong, with high volumes owing to record grain shipments in October. Volumes declined in the last couple weeks of the year, abnormally cold weather and high dwell times at the Port of Vancouver were likely headwinds.

For the year, 2022 RTMs were essentially unchanged from 2021 (+0.3%). Relative to 2021, RTMs increased in each quarter, from 10% below 2021 levels in Q1, to flat in Q2, then 5% greater in Q3 and 7% greater in Q4 (Q4-21 freight traffic was significantly impacted by flooding in British Columbia).

Data from the first four weeks of the year indicate that 2023 is off to a stronger start than 2022, based on higher shipments of grain & fertilizers; metals & minerals; and coal.

Canadian Class 1 Revenue Ton-miles
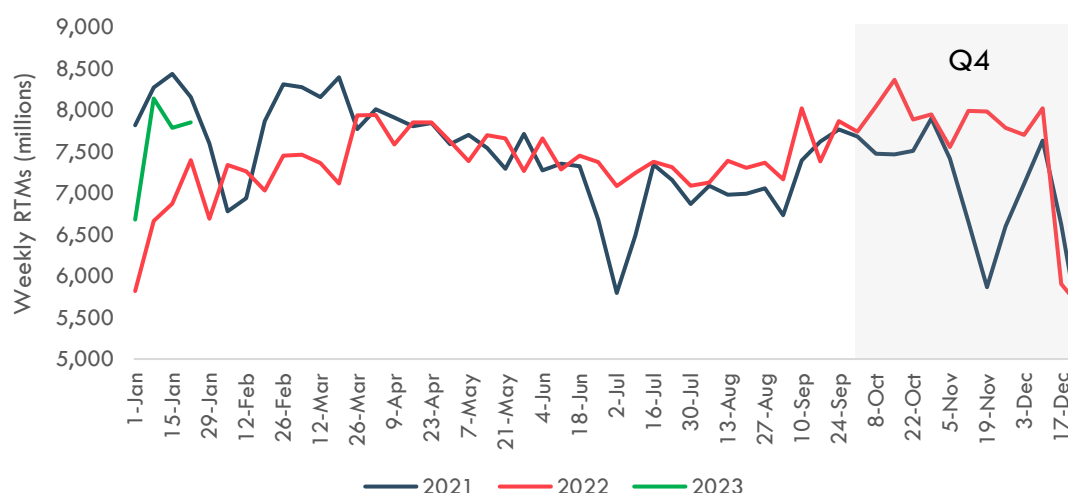
Source: CN Key Weekly Metrics; CP Weekly Key Metrics
Note: The dates indicate the first day of the week (e.g., "1-Jan" corresponds to the week of Jan 1-8). The week starting January 1, 2023, is compared against the weeks starting January 2, 2022, and January 3, 2021.

Revenues, Revenue Ton-miles, and Carloads

As shown in the figure and table below, in Q4-22, RTMs and carloads were up for most product categories compared to Q4-21, and freight revenues were up for all product categories. Two product categories enjoyed double-digit traffic growth. RTMs for grain & fertilizers were up 21% and carloads were up 18%; and RTMs for automotive were up 17% and carloads were up 14%.

Freight revenues increased to a greater extent than the increase in traffic volumes; however, operating expenses also increased significantly. Canadian Class 1 Q4-22 operating expenses were 21% above Q4-21 levels, largely driven by a 65% increase in fuel cost expense (not

shown). Since the onset of the pandemic, increases in rail freight rates have been lower than the increases in trucking, industrial, and commodity prices (see *Freight Rates*). In fact, a recent study found that, in 2021, Canadian rail freight rates were amongst the lowest in the world, and 11% lower than U.S. rail freight rates.[3]

Class 1 Freight Revenues, RTMs, and Carloads by Commodity, Q4-22 vs Q4-21
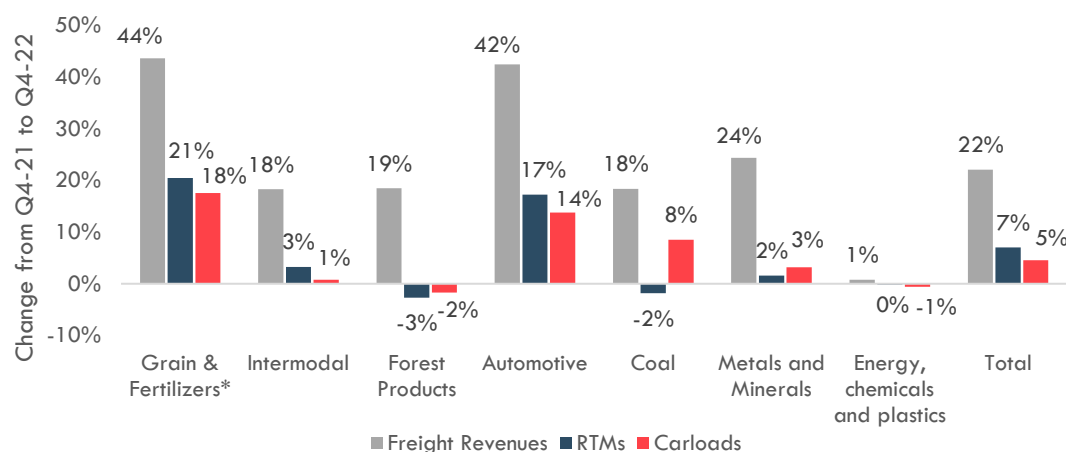
Source: CN Quarterly Review; CP Quarterly Earnings Release
Includes potash and sulphur

Q4: Canadian Class 1 RTMs (millions), by Commodity

	Q4-22	Q4-21	Change (%)	Change (#)
Grain & Fertilizers*	34,667	28,769	21%	5,898
Intermodal	20,882	20,225	3%	657
Forest Products	7,312	7,515	-3%	-203
Automotive	1,123	958	17%	165
Coal	8,348	8,502	-2%	-154
Metals and Minerals	9,611	9,459	2%	152
Energy, chemicals and plastics	17,073	17,096	0%	-23
Total	**99,016**	**92,524**	**7%**	**6,492**

Year (Q1-Q4): Canadian Class 1 RTMs (millions), by Commodity

	2022	2021	Change (%)	Change (#)
Grain & Fertilizers*	113,632	118,248	-4%	-4,616
Intermodal	87,202	86,116	1%	1,086
Forest Products	30,761	31,666	-3%	-905
Automotive	4,558	4,160	10%	398
Coal	37,649	36,816	2%	833
Metals and Minerals	39,316	37,913	4%	1,403
Energy, chemicals and plastics	70,898	67,905	4%	2,993
Total	**384,016**	**382,824**	**0%**	**1,192**

Source: CN Quarterly Review; CP Quarterly Earnings Release
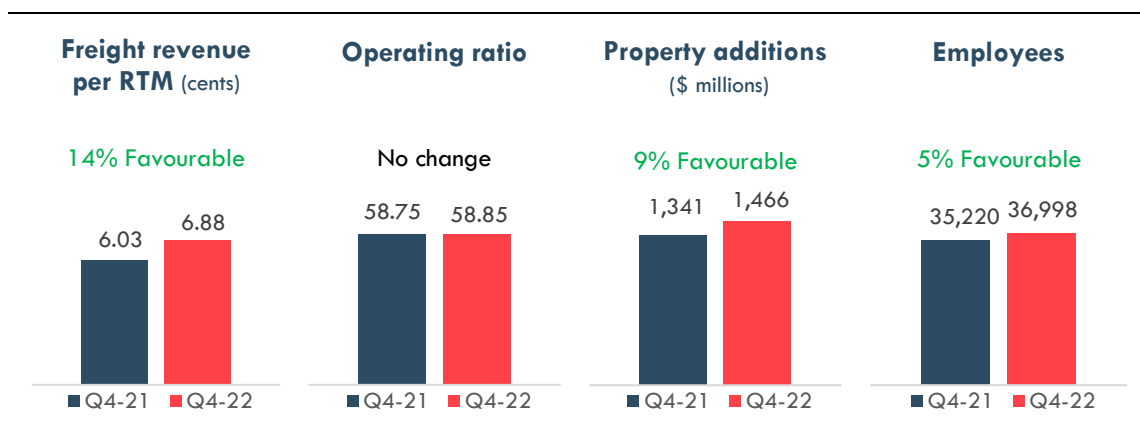*Includes potash and sulphur.*

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[3] *CPCS, International Comparison of Railway Freight Rates, January 2023.*

Select Key Financial and Operating Metrics

From Q4-21 to Q4-22, freight revenue per RTM increased by 14%, while operating expenses per RTM increased by 13%. Revenue per RTM increased by between 15% and 22% for all commodity groups, except energy, chemicals and plastics, which increased by just 1%. As both revenues and expenses increased, there was no significant change to the Class 1 operating ratio.

During the fourth quarter of 2022, Class 1s invested $1,466 million dollars in their networks, which is 9% more than they did in Q4-21.
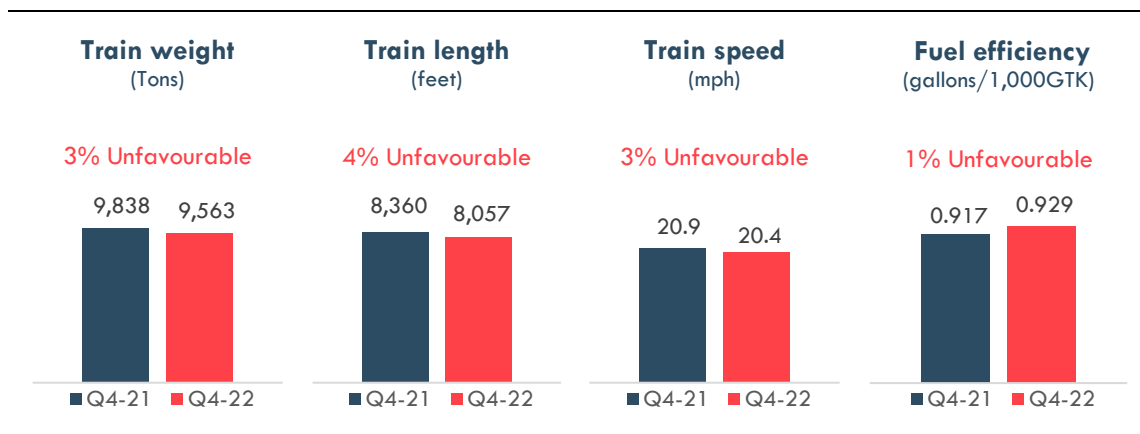
Industry employment increased by 5%, or 1,778 jobs, compared to Q4-21. 2021 was a strong year of hiring; CN and CP each increased their employee count by around 900 workers.

Freight revenue per RTM (cents)	**Operating ratio**	**Property additions** ($ millions)	**Employees**
14% Favourable	No change	9% Favourable	5% Favourable
6.03 / 6.88	58.75 / 58.85	1,341 / 1,466	35,220 / 36,998
■ Q4-21 ■ Q4-22	■ Q4-21 ■ Q4-22	■ Q4-21 ■ Q4-22	■ Q4-21 ■ Q4-22

Source: CN Quarterly Review; CP Quarterly Earnings Release
Note: The operating ratio is calculated as the simple average of CN and CP.

Difficult operating conditions and mandatory restrictions affected Q4-22 train-related performance metrics. There were several weeks in Q4-22 where conditions limited train lengths, weights, and speeds. Average train weight, length, and speed all decreased compared to Q4-21, contributing to a slight reduction in fuel efficiency for the quarter.
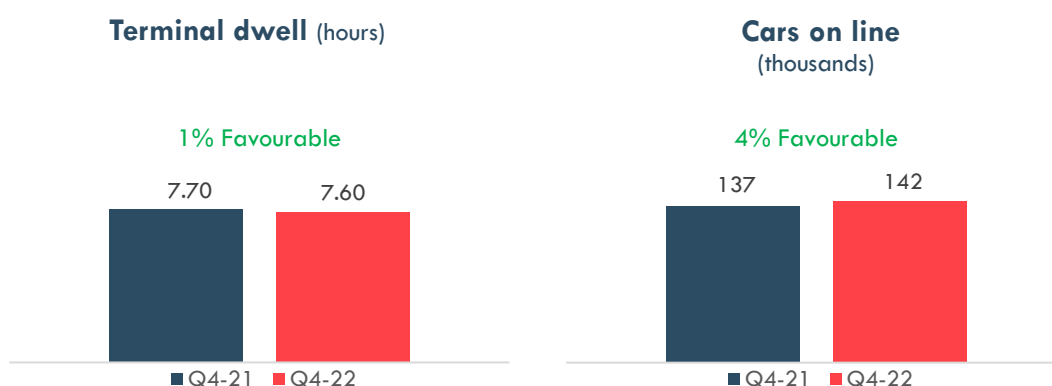
Train weight (Tons)	**Train length** (feet)	**Train speed** (mph)	**Fuel efficiency** (gallons/1,000GTK)
3% Unfavourable	4% Unfavourable	3% Unfavourable	1% Unfavourable
9,838 / 9,563	8,360 / 8,057	20.9 / 20.4	0.917 / 0.929
■ Q4-21 ■ Q4-22	■ Q4-21 ■ Q4-22	■ Q4-21 ■ Q4-22	■ Q4-21 ■ Q4-22

Source: CN Quarterly Review; CP Quarterly Earnings Release
Note: All four metrics are calculated using the simple average of CN and CP.

Q4-22 railway terminal dwell times were 7.7 hours or less throughout each of the first 11 weeks of the quarter, and then increased to 9.5 and 9.7 hours in the last two weeks. Overall, railway terminal dwell averaged 7.6 hours for the quarter, which is a 1% improvement compared to Q4-21; while dwell times at ports increased by 14% to 26%, highlighting the importance of all players in supply chains when measuring efficiency (see *Supply chains*).

The average numbers of rail cars on line increased by 4% (5,170 cars) compared to Q4-21; the majority of this increase was attributable to the increase in covered hoppers on line (9% or 4,650 cars) rather than a slow down of rail service. In response to strong demand, Canadian Class 1 railways rapidly increased the number of covered hoppers on line, from around 45,000 in mid-August to 56,000 by the end of September, to service record grain shipments in Q4.

In Q4-21, several grain records were achieved. CN set an all-time weekly record during the week of October 16th and an all-time monthly record in October 2022. CP set an all-time monthly record in October 2022, and Q4-2022 was CP's second-best quarter ever for grain.

Terminal dwell (hours)

1% Favourable

	7.70	7.60

■ Q4-21 ■ Q4-22

Cars on line
(thousands)

4% Favourable

	137	142

■ Q4-21 ■ Q4-22

Source: CN Quarterly Review; CP Quarterly Earnings Release; CN Key Weekly Metrics; CP Weekly Key Metrics
Note: Terminal dwell is calculated using the simple average of CN and CP.

Freight Industry Data

The freight industry data in this section of the report have some overlap with the Class 1 data reported above. The Class 1 data covered CN and CP operations in Canada and the U.S., whereas this section is specific to Canadian operations and includes data from all freight railways, including shortlines.

The data from the various statistical agencies included in this section have a slightly longer lag time than the Class 1 data, and as a result, the data are not always available for all months of the most recent quarter. As such, most of the freight data are analyzed on either a YTD or monthly basis, rather than quarterly.

Carloads & Intermodal Units

Statistics Canada reports monthly carloadings for over 60 commodities (which are categorized into 11 commodity groupings in this report), as well as intermodal units.

On a YTD basis (January-November), non-intermodal carloadings were equal to 2021 levels. 2022 monthly carloadings have exceeded 2021 levels in each of the past seven months. On a YTD basis, carloads were up for 6 of the 11 commodity groupings, led by a 13% increase in machinery & automotive and a 10% increase in coal. Carloads were down for the other 5 commodity groupings, led by a significant decline in agriculture (-21% or -102,035 carloads). The small 2021-2022 crop, which was caused by severe drought conditions in the Prairies in summer 2021, impacted agricultural shipments well into 2022.

On a YTD basis (January-November), total 2022 intermodal traffic loaded was 1% below 2021 levels.
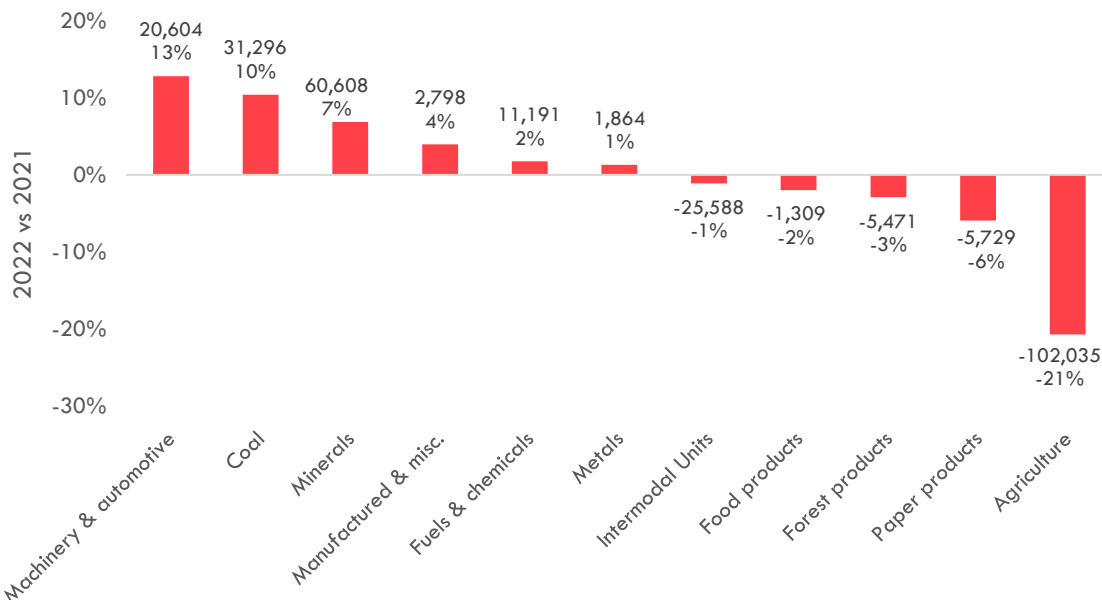
Canadian Railways, Carloads
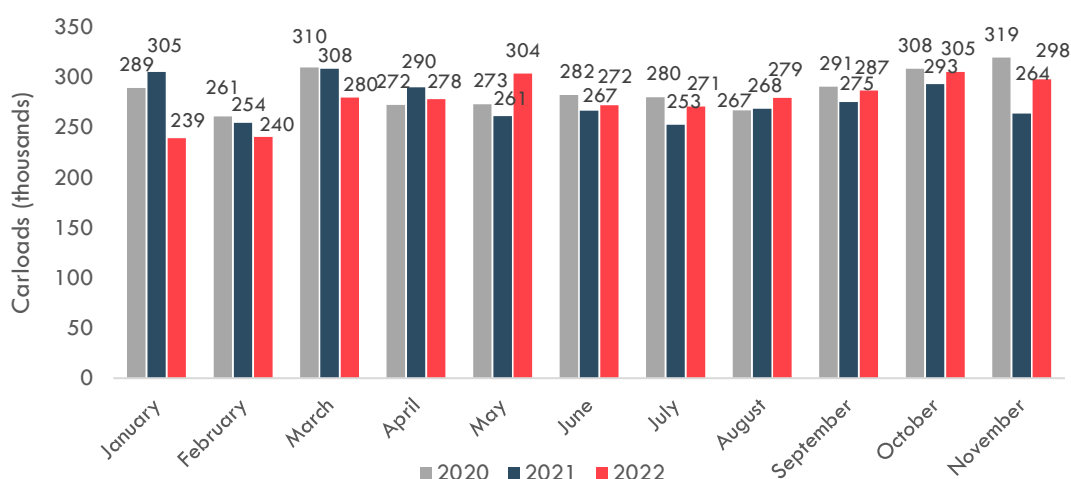
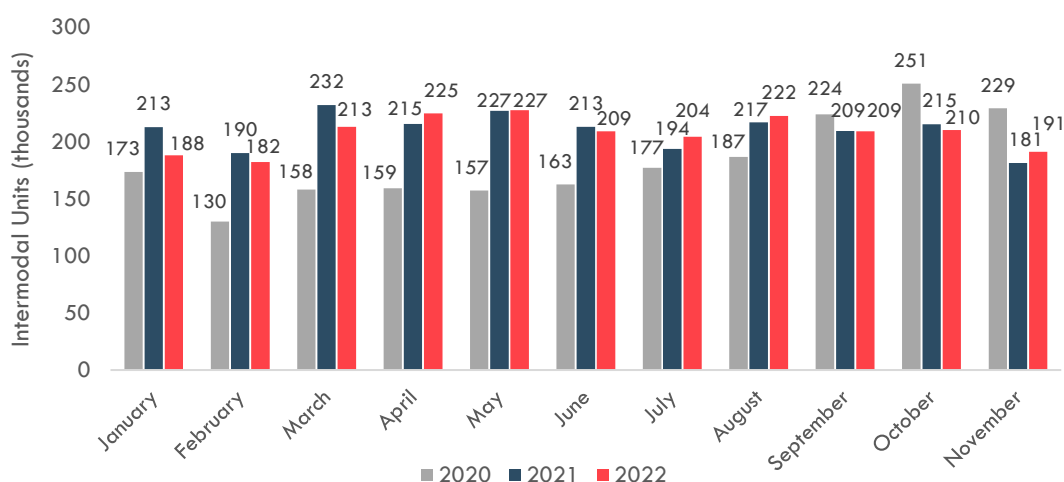*Source: Statistics Canada, Monthly Railway Carloadings Survey*

Canadian Railways, Carloads by Commodity & Intermodal Units (Jan-Nov)

Source: Statistics Canada, Monthly Railway Carloadings Survey

Canadian Railways, Intermodal Units

Source: Statistics Canada, Monthly Railway Carloadings Survey

On a YTD basis (January-November), relative to 2021, Eastern Canada has been outperforming Western Canada in terms of freight traffic loaded.[4] This is contrary to traffic growth patterns observed over the past couple of decades. One factor driving this relative performance is the different product mix in each part of the country. Rail activity in Eastern Canada is relatively concentrated in minerals, metals, and machinery & equipment, for which carloads are up on a YTD basis. In Western Canada, rail activity is relatively concentrated in bulk commodities such as agricultural products and coal. The significant reduction in agricultural products, due to a poor 2021-2022 crop year, outweighed the YTD gains in coal.

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[4] Canada is split East-West at Thunder Bay, Ontario.

In the Eastern Division, carloads were up 8% and intermodal shipments were flat compared to 2021. In their fourth quarter earnings presentations, CN and CP spoke to the significant growth they have driven at East Coast ports. CP recorded more than 70% growth in twenty-foot equivalent units (TEUs) at the Port of Saint John in 2022 compared to 2021; and CN set a record in 2022 for intermodal volumes at the Port of Halifax. Both railways have invested in their East Coast port connections to offer competitive alternatives to congested U.S. ports to shippers looking for efficient and low-cost solutions.

In the Western Division, carloads and intermodal shipments were down by 4% and 2%, respectively. This highlights the impacts of marine vessel delays and long port dwell times on throughput at key western trade corridors.

YTD (Jan-Nov): CDN Carloads and Intermodal Units by Region

	2022 vs 2021
Eastern Division	
Carloads	8%
Intermodal Units	0%
Western Division	
Carloads	-4%
Intermodal Units	-2%
Total	
Carloads	0%
Intermodal Units	-1%

Source: Statistics Canada, Monthly Railway Carloadings Survey
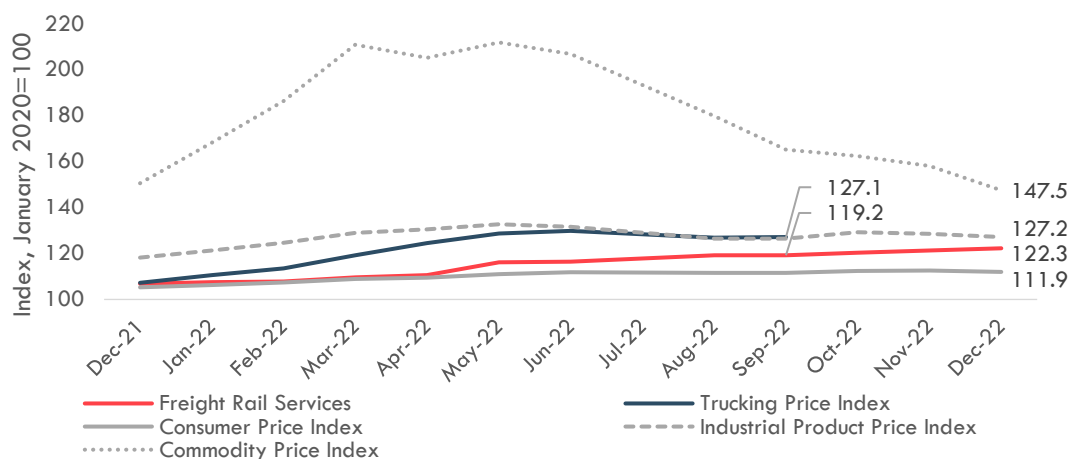
Freight Rates

From the onset of the pandemic until around January 2022, Statistics Canada's measurement of rail freight rates, trucking rates, and consumer prices were all following a similar inflationary path. However, relative to consumer prices, trucking prices began to rise more rapidly starting in January 2022, and rail freight rates began to rise more rapidly starting in May 2022, albeit to a lesser extent. Higher fuel prices are likely the most significant contributing factor to this recent, short term trend.

Over the past three months (September to December 2022), consumer prices have leveled off, while rail freight rates increased by 2.5%. Trucking data are not available any more recently than September 2022. Analyzing the most recent month of comparable data (September 2022), rail freight rates have increased by 19.2% since January 2020, while trucking prices have increased by 27.1%. Throughout this time period, operating expenses, most notably fuel costs, have increased.

Following strong increases since the onset of the pandemic, industrial prices have levelled off, while commodity prices have come down, but remain 47.5% above January 2020 levels.

## Price Index of Rail Services vs Other Price Indices

Source: Statistics Canada, Freight Rail Services Price Index, Industrial Product Price Index, For-hire Motor Carrier Freight Services Price Index, and Consumer Price Index. Bank of Canada, Commodity Price Index

Exports

In recent months, railway shipments of cross-border trade have decreased from the high levels experienced in March through June but remained above 2021 levels.[5]

Rail Merchandise Trade with the U.S.
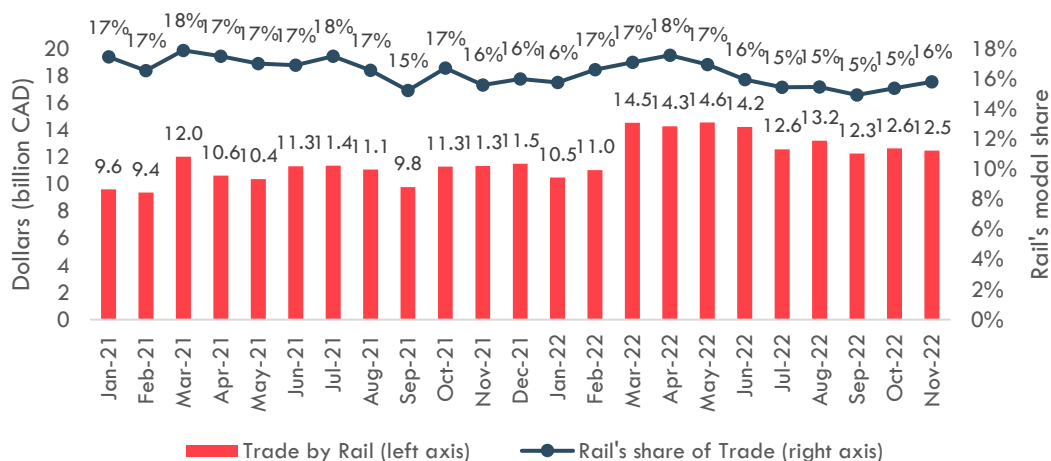
Source: Transport Canada, Transportation activity indicators

The 2021-2022 grain crop was significantly affected by drought conditions in summer 2021. From January through August 2022, the number of covered hopper cars unloaded at western ports each month was lower than in the corresponding months in 2020 and 2021. Following a strong harvest, grain shipments picked up rapidly in September 2022 – as monthly unloading more than doubled; and continued to increase through November. However, on a YTD basis

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[5] The trade figures presented here are for trade with the U.S., by value, and is for the mode of transport used to cross the border. Using Transport Canada annual data, the Railway Association of Canada estimates that over 50% of total *export volumes* are transported by rail, either through transborder rail transportation or through rail-marine exports.

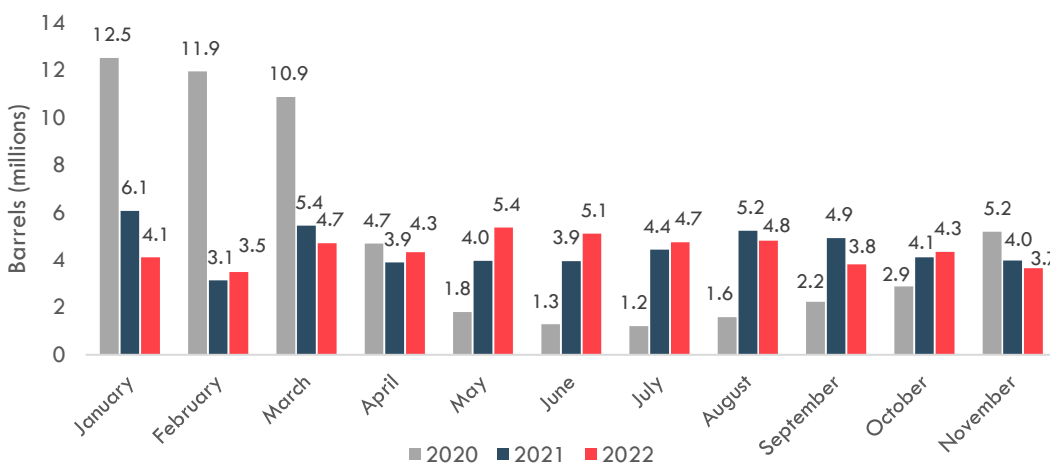(January-November 2022), activity was down 23% compared to 2021 and 35% compared to 2020.

Over the first 11 months of 2022, exports of crude oil by rail were down 1% compared to 2021 and 14% compared to 2020.

Covered Hopper Cars Unloaded at Western Ports
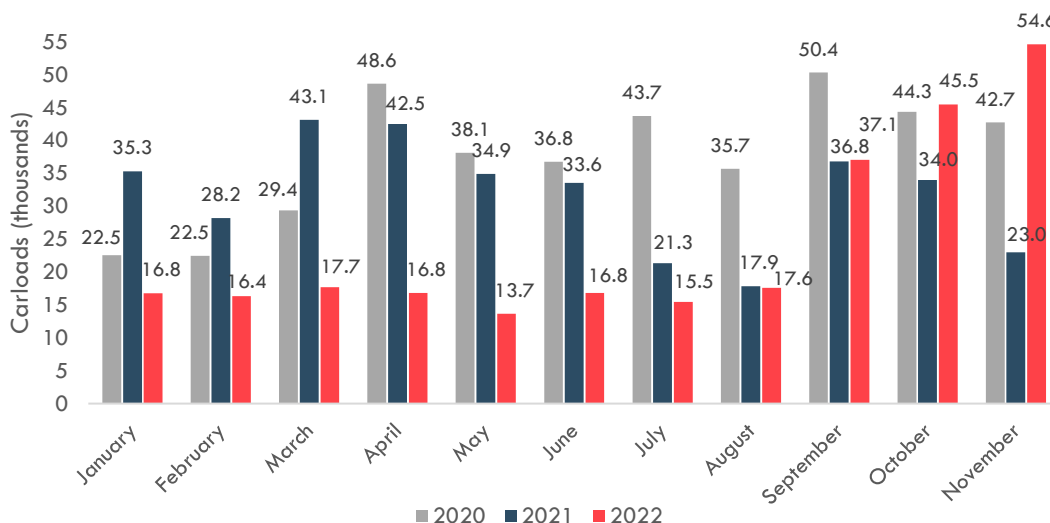
Source: Transport Canada, Transportation system utilization and performance

Canadian Crude Oil Exports by Rail

*Source: Canada Energy Regulator, Canadian Crude Oil Exports by Rail*

Supply Chains

Modern supply chains are complex and, when they fall out of synchronization, the effects on transportation providers, shippers, suppliers, and consumers are felt widely and deeply. Rail has remained among the most reliable and least variable modes during the last three years of enormous upheaval. And, while several factors continue to impact supply chains, other modes' conditions and performance are starting to show signs of recovery and improvement, which will benefit all supply chain players.

Global

Freightos' *Global Container Freight Index*[6] indicates that container prices have come down after being elevated throughout most of the pandemic (not shown). Prior to the pandemic, prices were around $1,500. Prices began to rise rapidly starting in the second half of 2020 and reached a record weekly high of $11,109 in September 2021. Prices remained high through March 2022, before starting to make their way back down. By mid-December 2022, prices decreased to $2,127 and have remained around $2,200 since (as of January 27, 2023).

Marine vessel delays and on-time performance continued to improve, but still remain unfavourable when compared to pre-pandemic levels.[7] From 2019 through 2021, global marine vessel performance continued to deteriorate, until starting to improve in early 2022. According to Sea-Intelligence's Global Liner Performance report[8], *Global Schedule Reliability* continued to improve throughout 2022, climbing from 30.4% in January to 56.6% in December. However, this is still well below pre-pandemic (2019) reliability, as shown below. The *Global Average Delays for Late Vessel Arrivals* also made significant improvements throughout 2022, decreasing from an average of 8.0 days in January to 5.4 days in December. Delays of this significance continue to have negative impacts throughout supply chains, causing bottlenecks and inefficiencies well-beyond the marine link in the chain.

Global Schedule Reliability
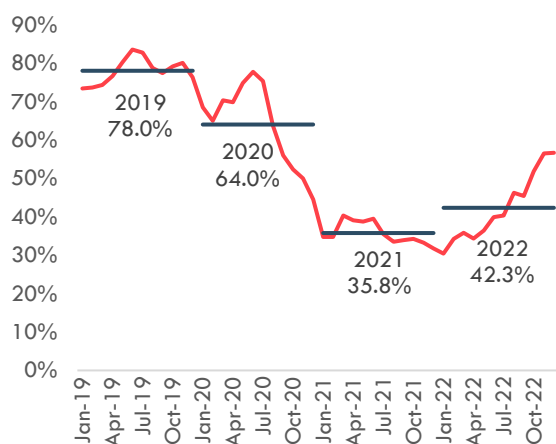
Global Average Delays for Late Vessel Arrivals
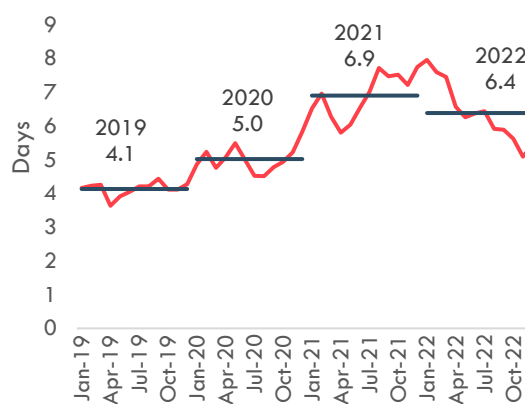
Source: Sea-Intelligence, GLP report issue 137

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[6] https://fbx.freightos.com/freight-index/FBX
[7] https://www.sea-intelligence.com/press-room/185-schedule-reliability-continue-its-upwards-trend
[8] https://www.sea-intelligence.com/press-room/185-schedule-reliability-continue-its-upwards-trend
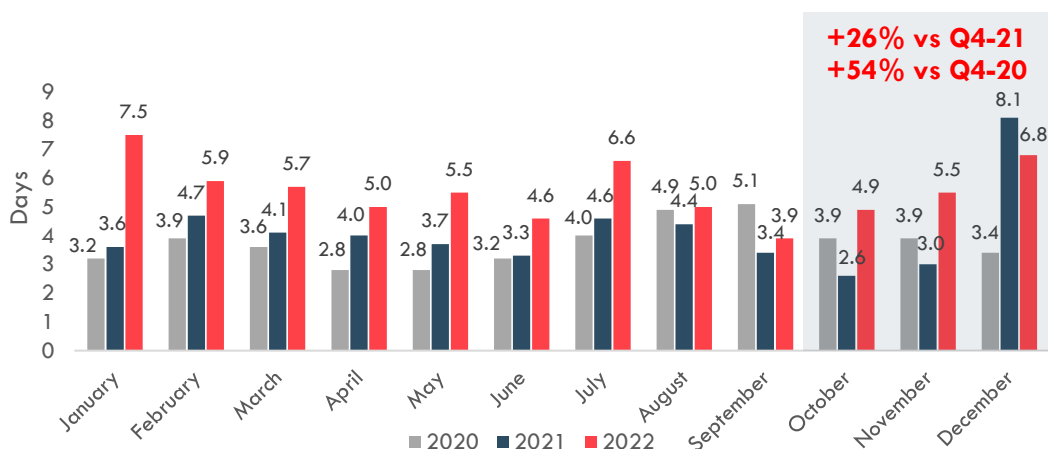
Canadian Ports

Dwell times at the Port of Vancouver increased in Q4-22, averaging 26% longer than Q4-21 and 56% longer than Q4-20. For the year, dwell times averaged 5.6 days, which was 35% longer than 2021, 54% longer than 2020, and 125% longer than 2019 (not shown). The impact was felt throughout Canadian supply chains and is the underlying reason for many of the performance issues seen in the 2022 numbers.
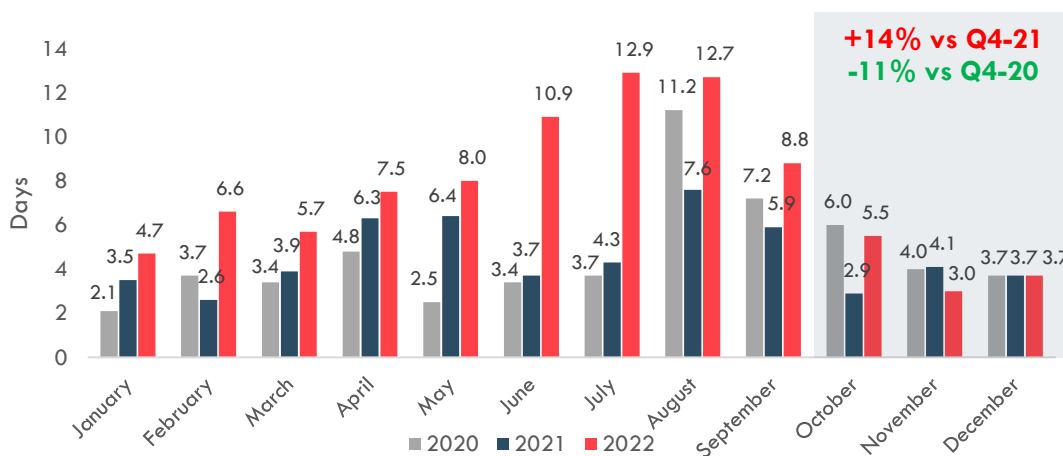
On the positive side, dwell times at the Port of Montreal decreased significantly from the highs experienced in July and August 2022 (12.9 and 12.7 days, respectively), down to an average of 4.1 days in Q4-22. However, Q4-22 dwell times were still 14% longer than Q4-21, but 11% shorter than Q4-20. For the year, dwell times averaged 7.5 days, which was 64% longer than 2021, 62% longer than 2020, and 139% longer than 2019 (not shown). These kinds of performance issues have negative consequences throughout supply chains and play a large role in the deterioration of the efficiency of all players.

Vancouver - Gateway terminal rail dwell performance by month

Source: Port of Vancouver, https://www.portvancouver.com/port-dashboard/supply-chain-performance/

**Montreal - Average terminal dwell of containers (import-rail)**

Source: Port of Montreal, https://www.port-montreal.com/en/the-port-of-montreal/about-the-port/documentation-centre/performance-reports

Canadian Railways

Despite the enormous challenges over the past three years, railway dwell times have been much shorter and more consistent compared to other modes. Monthly dwell times ranged from 6.8 to 9.2 hours, averaging 7.7 hours. In Q4-22, average dwell times were 1% shorter than Q4-21, and 3% longer than Q4-20. For the year, dwell times averaged 7.8 hours, up 3% from averages of 7.6 hours in both 2021 and 2020.

Canadian Class 1 Railways - Average Terminal Dwell
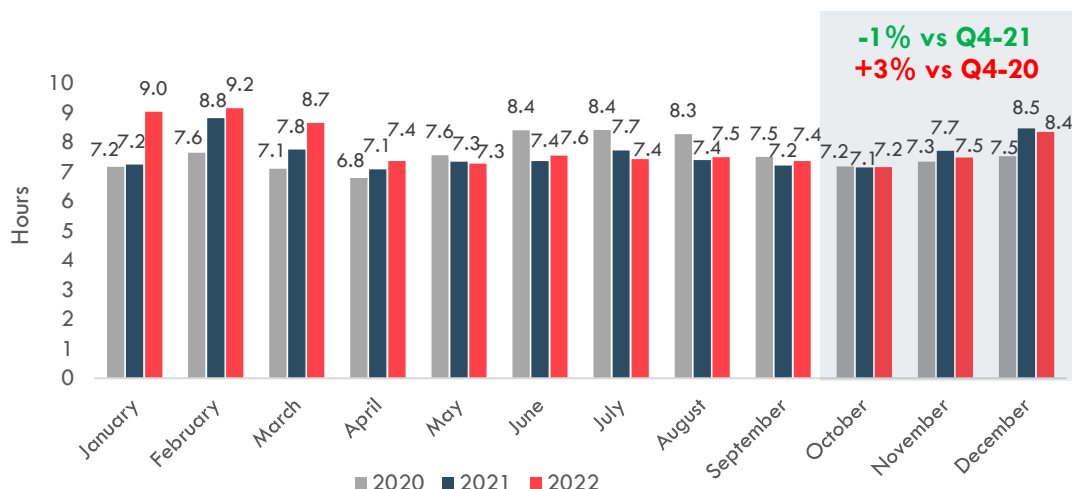
Source: CN Key Weekly Metrics; CP Weekly Key Metrics
Note: The average terminal dwell time is calculated as the simple average of CN and CP. Weekly data has been converted into monthly data. The conversion is not exact as some months are allocated 4 weeks of data and others are allocated 5 weeks of data, and the start dates of the weeks vary across years.

Passenger Rail Data

There is less monthly and quarterly data available for the passenger rail operations compared to freight rail operations, and in some cases, there may be a longer lag period. This section looks at both in-year passenger volumes and comparisons to pre-pandemic ridership levels.
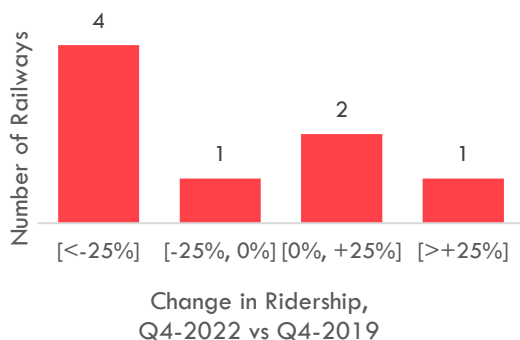
RAC Member Ridership

Passenger rail ridership was significantly impacted by the COVID-19 pandemic and evolving restrictions; and variable rates of employees returning to office work continue to affect ridership. This section looks at the recovery of passenger rail ridership among RAC members. In Q4-22, ridership data were available for eight of RAC's tourism, intercity, and commuter railway operators.[9]

Ridership continued to increase across all passenger rail services. In fact, there were a few railways that achieved greater ridership in Q4-22 than they did in Q4-19 (pre-pandemic).

Compared to Q4-19, Q4-22 ridership was down by more than 25% for four members, down by less than 25% for one member, up by less than 25% for two members, and up by more than 25% for one member. For the year, 2022 ridership was down compared to 2019 for all reporting members; three of them were down by over 25% and the other five were down by less than 25%.

RAC Members, Ridership, Q4

RAC Members, Ridership, Annual
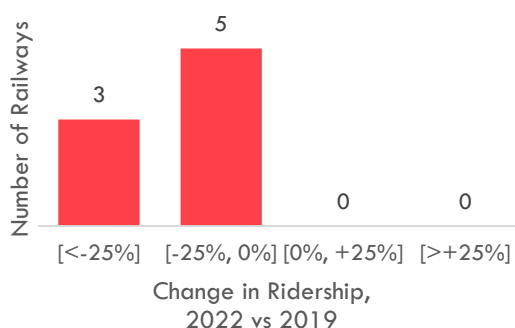
Urban Transportation

Following strong growth from January through September 2022 – urban transit ridership appears to have leveled off through November. As of November, nation-wide urban transit ridership was 29% below pre-pandemic levels.

More employees heading back to the workplace throughout 2022 was a contributing factor to the increases in urban transit ridership.[10] However, many employers have adopted a hybrid work model, which will have a structural impact on transit ridership moving forward. In addition, Statistics Canada data from May 2022 that breaks down the number of commuters by

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[9] *https://www.railcan.ca/membership/member-railways/*
[10] *https://www.benefitscanada.com/news/bencan/fewer-employees-working-remotely-in-2022-statscan/*

mode (driving, bus, subway, train, walk, bike, motorcycle) suggests that ridership recovery is proving especially difficult for commuter rail.[11]

Urban Transit Systems Ridership by Region
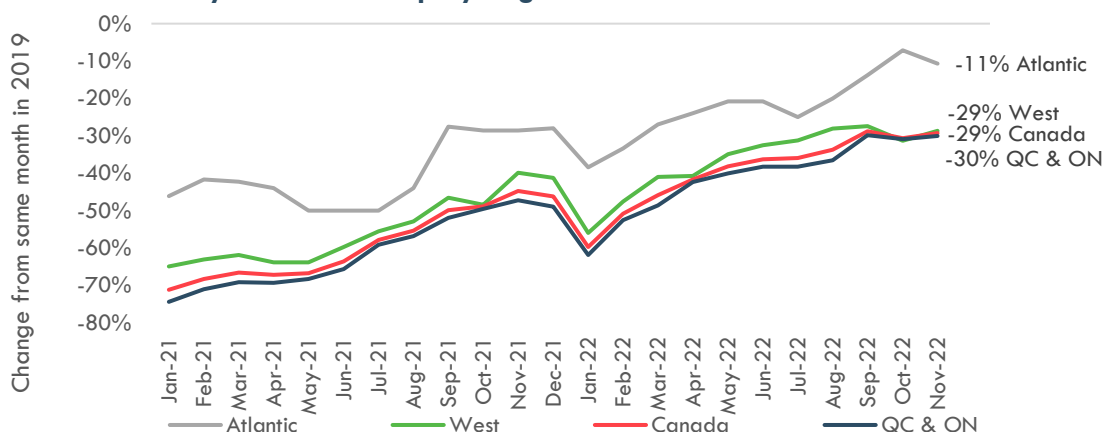
Source: Statistics Canada, Monthly Passenger Bus and Urban Transit Survey

Tourism Rail

There is a considerable lag in data on tourism expenditures. The latest available data cover Q3-22. Tourism expenditures are analyzed compared to their pre-pandemic (2019) levels, in order to deliver a clear picture of the extent of the recovery.

In Q3-22, total tourism industry expenditures reached 6% below Q3-19 levels. Two select tourism industries surpassed their Q3-19 levels, including passenger rail (+12%) and accommodation (+10%). Expenditures on travel agencies, interurban bus, convention fees and vehicle rentals remained more than 20% below pre-pandemic levels.

Tourism Expenditures, Q3
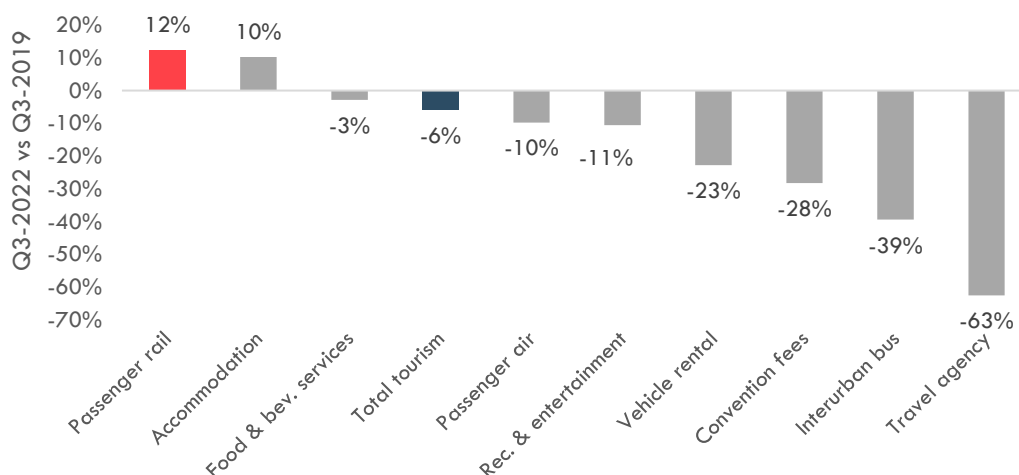

Source: Statistics Canada, National Tourism Indicators

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[11] *Statistics Canada, Number of commuters remains below May 2016 levels in May 2022, except for driving to work, November 2022.*

Intercity Passenger Rail

The latest available ridership data for VIA Rail cover Q3-22.

In Q3-22, VIA Rail ridership exceeded one million passengers – more than doubling Q3-21 ridership of 535.3 thousand. Despite the strong growth over the past two years, ridership remained 21% below the Q3-19 pre-pandemic level of 1.364 million passengers.

VIA Rail Ridership, Quarterly
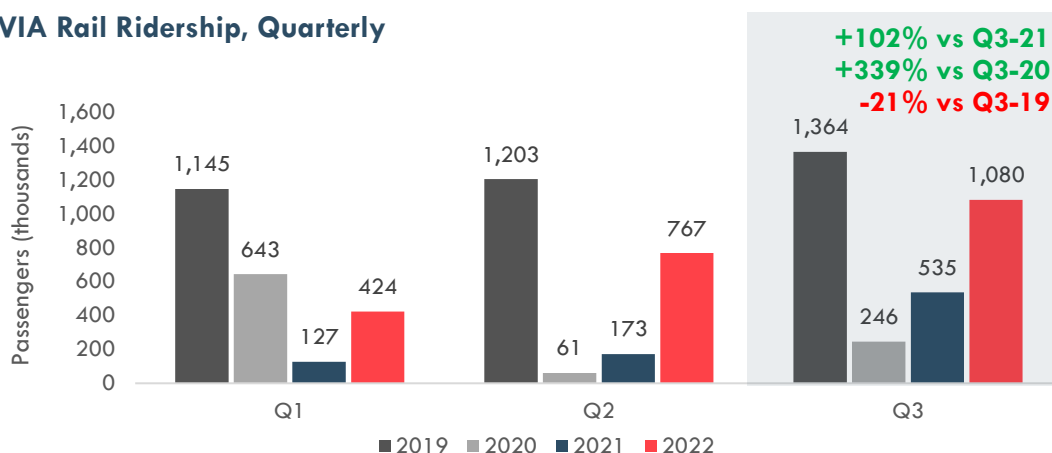

Source: VIA Rail, Quarterly and Annual Reports

Amtrak has many routes throughout the U.S., and three routes that include a Canadian segment. Ridership on these three routes does not imply that passengers crossed the border, as they may have travelled a particular segment on either side of the border.[12]

Q4-22 data for Amtrak's routes with segments in Canada indicate that ridership continued to recover. Q4-22 ridership of 233,000 passengers was 26% higher than Q4-21 but remained 29% below the Q4-19 pre-pandemic level of 326,000 passengers.

For the year, 2022 ridership was 50% higher than 2021, but remained 38% below 2019.

Amtrak Ridership on Routes with Segments in Canada, Quarterly
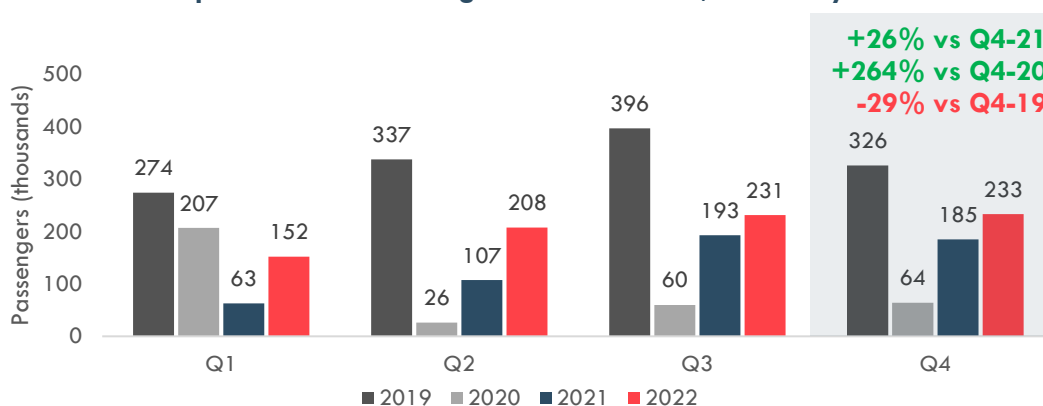
Source: Amtrak, Monthly Performance Reports
Note: Includes three routes (Maple Leaf; Cascades; Adirondack).

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[12] For example, the Maple Leaf route extends from New York City to Toronto; Cascades extends from Eugene Oregon to Vancouver; and Adirondack extends from New York City to Montreal.
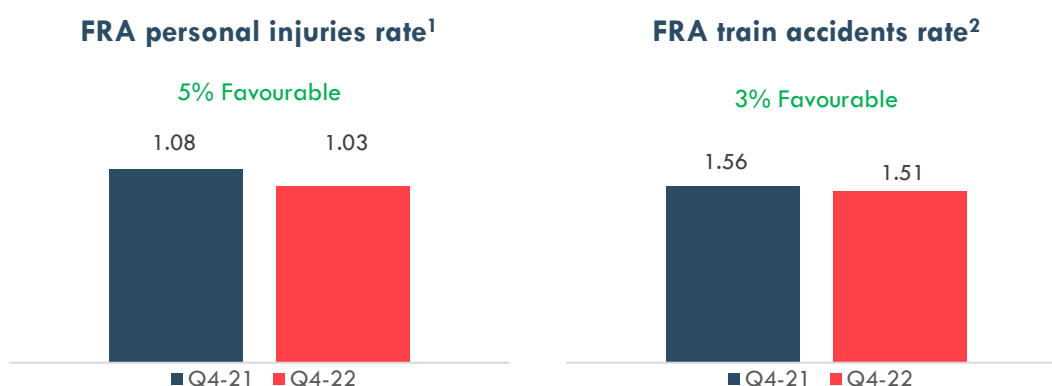
Rail Safety Data

The RAC tracks Canadian rail safety performance data from the Federal Railroad Administration (FRA) and the Transportation Safety Board (TSB).

Federal Railroad Administration Safety Data

In 2022, Canadian Class 1 railways had the lowest Federal Railroad Administration (FRA) train accident rates in North America (not shown).[13] In Q4-22, the Canadian Class 1 FRA personal injuries rate and FRA train accident rate were 5% and 3% lower than in Q4-21, respectively.

FRA personal injuries rate[1]

5% Favourable

1.08   1.03

Q4-21   Q4-22

FRA train accidents rate[2]

3% Favourable

1.56   1.51

Q4-21   Q4-22

Source: CN Quarterly Review; CP Quarterly Earnings Release.
Note: The rates are calculated using the simple average of CN and CP.
[1] Injuries per 200,000 employee hours
[2] Accidents per million train-miles
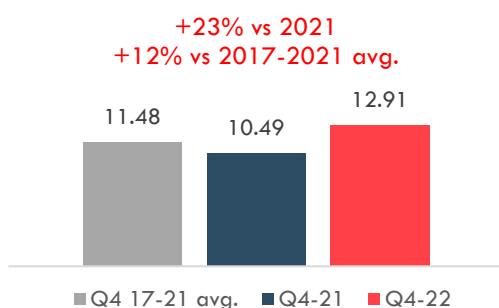
Transportation Safety Board Data

This section looks at the most recent data from the Transportation Safety Board, which provides railway occurrence statistics of all federally regulated railways in Canada. Through a working group, the RAC and TSB continue to work together to improve the quality and accuracy of the TSB data.

Accident data can vary significantly from quarter to quarter, depending on a variety of factors, including weather. In Q4-22, rail safety performance was generally unfavourable across most indicators.
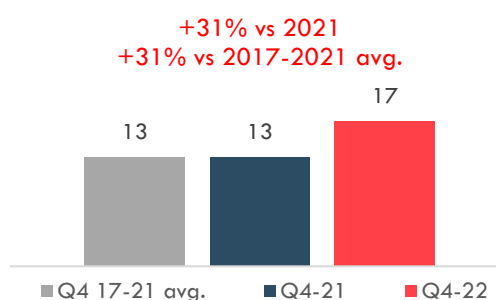
The Q4-22 accident rate was 12% higher than the Q4 2017-2021 average. Main track derailments and crossing and trespassing accidents were 31% above the Q4 2017-2021 average. There were 27 accidents involving dangerous goods – one involving the release of product.

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[13] CN and CP FRA train accident rates are from their 2022 fourth quarter reports, representing network-wide operations. The statistics for other Class 1 railways are for U.S. operations and are preliminary, covering the January-November 2022 period. Sources: Federal Railroad Administration, Office of Safety Analysis; CN Quarterly Review; CP Quarterly Earnings Release.

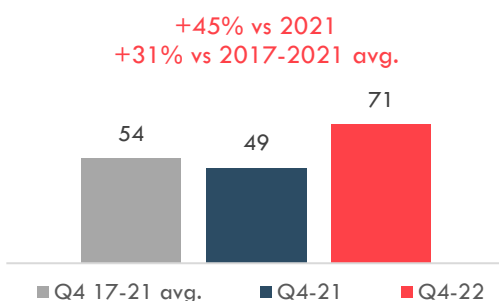## Accidents per million train-miles

+23% vs 2021
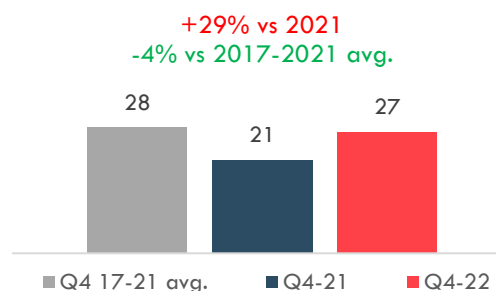+12% vs 2017-2021 avg.

- 11.48 — Q4 17-21 avg.
- 10.49 — Q4-21
- 12.91 — Q4-22

Main-track derailments

+31% vs 2021
+31% vs 2017-2021 avg.

- 13 — Q4 17-21 avg.
- 13 — Q4-21
- 17 — Q4-22

Crossing and trespassing accidents

+45% vs 2021
+31% vs 2017-2021 avg.

- 54 — Q4 17-21 avg.
- 49 — Q4-21
- 71 — Q4-22

Accidents involving dangerous goods

+29% vs 2021
-4% vs 2017-2021 avg.

- 28 — Q4 17-21 avg.
- 21 — Q4-21
- 27 — Q4-22

Source: Transportation Safety Board, Monthly rail transportation occurrence statistics
Note: The TSB data are preliminary and subject to year-end validation and reconciliation.
Note: There are two methods for creating quarterly statistics from the Monthly statistics: i) adding up the monthly statistics for the three months in the quarter, or ii) subtracting September YTD from Dec YTD. RAC uses the subtraction method. In Q4, the subtraction method generated 276 accidents in Q4, whereas the addition method generated 257 accidents. The biggest discrepancy in Q4 was for non-main-track derailments - 1-2 cars. The subtraction method obtained 99 accidents and 13 incidents, whereas the addition method obtained 80 accidents and 30 incidents. The results may be different between the methods because the data are preliminary and generated from a "live" database.