

## SETTING THE RECORD STRAIGHT: FAIR RAIL COALITION'S RESPONSE TO PUBLIC CLAIMS AND ANALYSES REGARDING INTERNATIONAL RAIL FREIGHT RATE COMPARISONS<sup>1</sup>

Ryan Gallagher, McMillan LLP<sup>1</sup>  
Lucia Stuhldreier, McMillan LLP<sup>2</sup>  
François Tougas, McMillan LLP

### Introduction

In early 2023, the Railway Association of Canada (“**RAC**”) published a report prepared by CPCS entitled “International Comparison of Railway Freight Rates” (the “**CPCS Report**”), which compares rail freight revenues and volumes in Canada to other jurisdictions.<sup>3</sup> In response, the Coalition for the Factual Analysis of International Rail Rates (the “**FAIR Rail Coalition**” or “**FAIR**”), which consists of several associations<sup>4</sup> whose members all have significant dealings with Canadian National Railway (“**CN**”), Canadian Pacific Railway (“**CP**”)<sup>5</sup> or both, engaged several recognized experts to assess the CPCS Report’s methodology and findings, and RAC’s claims in respect thereof, and published its findings in a report (the “**FAIR Response**”).<sup>6</sup> Those experts included (a) Dr. David Gillen, Ph.D.,<sup>7</sup> (b) Dr. Larry Gould, Ph.D.,<sup>8</sup> and (c) RailState LLC.<sup>9</sup> This paper seeks to highlight certain of the most critical findings of the FAIR Response.

### RAC Commentary

The FAIR Response observes that what the RAC says about the CPCS Report, and what the CPCS Report itself says, are not always the same. For example, the RAC issued a news release that uses the CPCS Report to argue that Class I railways in Canada:

“...Offer the lowest rail freight rates among leading trading nations, rates 11% lower than the U.S, showing the robust competition that exists between Canadian railways.”<sup>10</sup>

RAC’s other public commentary goes a step further and argues that “robust competition” between Canada’s largest railways has caused those purportedly low rates:

“Canada’s low rate is proof that, as Canadian railways became more and more efficient over the past several decades, they passed on the savings to shippers and consumers. This is because there is robust competition between our largest railways.”<sup>11</sup>

Contrary to the RAC’s claims regarding “lowest rates”, the CPCS Report *does not*, in fact, compare rates. The CPCS Report compares the revenue that railways derive per revenue-ton mile (“**RTM**”), or its metric parallel, revenue-tonne kilometer (“**RTK**”), from rail freight.<sup>12</sup> When rail freight revenue is expressed on a cents per RTM basis, it is called “**CRTM**”. Thus, distance is just as important to CRTM values as the revenue for the traffic. Even if it were possible to reach a conclusion about rates by comparing CRTM, which it is not, it would require a thorough analysis of individual waybill data to control for a wide range of external factors, which CPCS did not attempt nor appear to have had instructions to do.

The CPCS Report is rightly careful to point out that:

“Rail rates can vary significantly depending on many factors such as commodity, distance, and volume, among others.”<sup>13</sup>

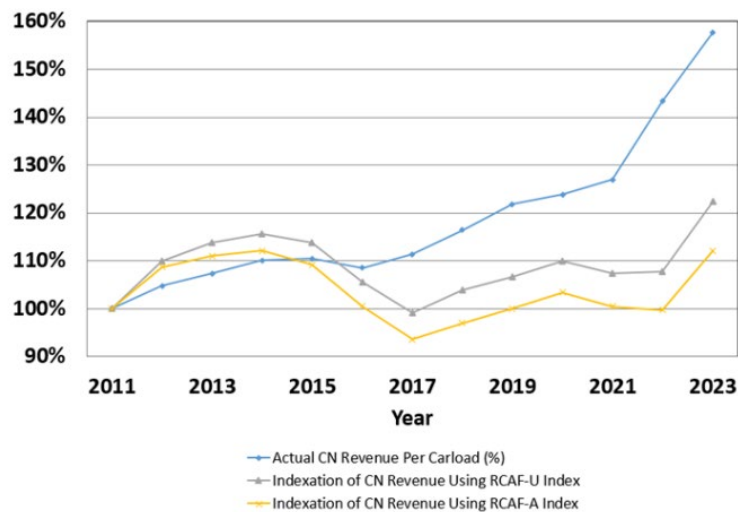
---

<sup>1</sup> Presented at the 59<sup>th</sup> Annual Meeting of the *Canadian Transportation Research Forum*, May 12-15, 2024 at Kelowna, British Columbia.

Despite that warning, the CPCS Report contains a very coarse, nation-level analysis of CRTM values in various jurisdictions that fails to give any consideration whatsoever to the various factors that CPCS says “significantly” impact rail freight rates.

## Background

CN and CP have been enjoying record profits. In large measure, that is a function of rail rates for captive traffic increasing far beyond rail cost inflation over the past couple of decades. Below is an example graph that shows the change in the railway’s actual revenue (base rate plus fuel surcharge) for a captive shipper’s traffic (single commodity for a single origin/destination pair)<sup>14</sup> compared to the average rail costs of the main North American railways, including CN and CP:<sup>15</sup>



Indeed, CN assumes it will continue to increase its rates faster than rail industry cost inflation.<sup>16</sup> CP’s public documents make statements to similar effect.<sup>17</sup> Figures 1 and 2 of the report of Dr. Larry Gould (discussed in more detail below) amply demonstrate that both CN and CP have achieved a return on equity far in excess of their after-tax cost of equity in each year from 2013 through 2022.

The excessive margins earned by CN and CP are damaging shippers, the Canadian economy generally and the employees, communities and productive industries that rely on them in particular. These facts stand in stark contrast to the RAC’s claims about rail rates in Canada.

The FAIR Response seeks to counter the incorrect conclusions claimed by the RAC, correct the shortcomings of the CPCS Report, and to provide policy makers and other interested stakeholders context and information.

## 1) Captivity and its Effects

The CPCS Report makes no attempt to assess the extent to which any rail traffic – in any jurisdiction – had available to it alternative, effective, adequate and competitive means of shipping freight at origin or destination. A multitude of third parties, including courts, commissions, panels, task forces and others, acknowledge the captivity of wide swaths of CN’s and CP’s networks in Canada, particularly shippers of bulk commodities. To cite just one recent example, the final report of the National Supply Chain Task Force released on October 6, 2022, noted:

“Railways are the only source of transport for many shippers, giving rail companies pricing and service discretion that is not balanced by normal market forces.”<sup>18</sup>

[underlining added]

While certain geographies of Canada may benefit from varying degrees of effective competition, whether from intermodal trucking or intramodal competition between CP and CN (or even other railways), a very large proportion of rail shipments in Canada benefit from no or minimal competition of either kind.

The readily observable rule and experience of rail shippers is that, all other things being equal, rates charged by railways for captive shipments are higher than rates charged where there is access to competitive means of shipping goods. Captive shipments exhibit rates uncoupled from cost, whereas competitive shipments exhibit rates coupled more closely to cost. Whenever rates are uncoupled from cost, it follows that the rates are uncompetitive. The producer surplus earned by a railway in such circumstances is a cost borne both by the shipper and society. The beneficiaries are the railway enterprise and its shareholders at everyone else’s expense.<sup>19</sup> The extent to which rail rates are uncoupled from costs is a crucial factor that the CPCS Report does not address.

## 2) Omission of Critical Factors/Metrics

The CPCS Report compares the revenues Canadian railways receive per RTM or RTK to railways in other countries. Expressing rates as CRTM values in this manner is a legitimate approach to correct for variations in rail mileage and lading weight, provided the traffic is comparatively similar in the first place. However, the CPCS Report provides no data or other information regarding the attributes of the traffic in jurisdictions outside Canada and fails to consider numerous critical factors, despite acknowledging the relevance of some of them.<sup>20</sup> We set out below some of the most crucial factors the FAIR Response identifies and that the CPCS Report ignores.

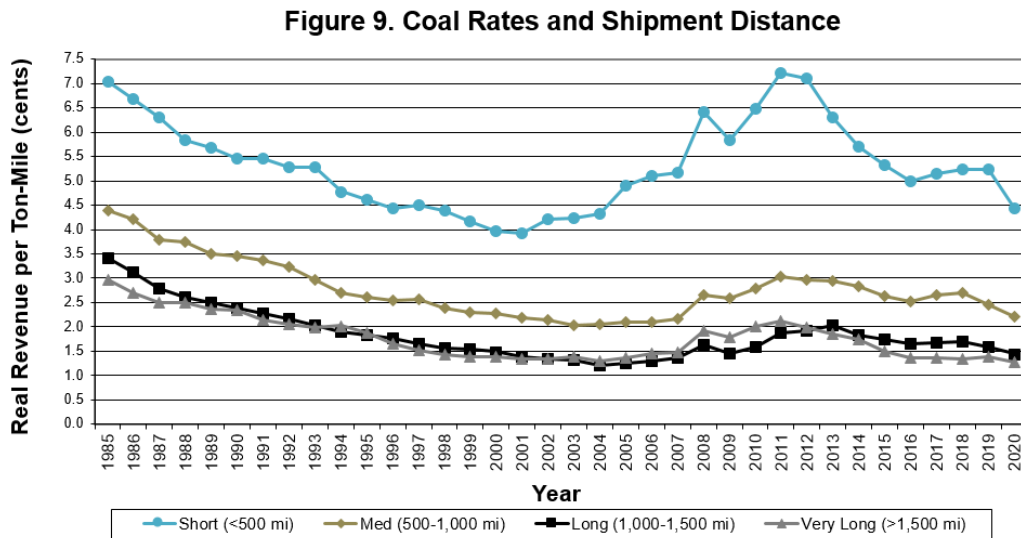
### A. Rail Mileage

The CPCS Report makes no attempt to address the widely divergent average rail haul distances between the various jurisdictions it compares. Distance is a critical factor because the relatively costly first and last mile of a movement, which often include marshalling and switching at origin or destination or both, represent proportionally less of longer hauls than shorter hauls. This “rate taper” effect, illustrated at Figure 1, has long been acknowledged in the rail industry, including by Transport Canada<sup>21</sup> and the World Bank.<sup>22</sup>

CN and CP routinely refer to the impact of distance on CRTM values.<sup>23</sup>

The STB monitors rail freight rates in the United States and periodically publishes its data and analysis in formal reports, the most recent of which covers the period 1985 – 2020 (the “**STB Annual Rate Study**”).<sup>24</sup> Figure 9 of the STB Annual Rate Study contains a graph for coal rates that illustrates the concept of rate taper:

**Figure 1 - Figure 1 of the FAIR Response (Figure 9 of the STB Annual Rate Study)<sup>25</sup>**



In particular, traffic comprising the blue line for hauls of less than 500 miles or ~805 km faces significantly higher rates on a CRTM basis compared to “medium” hauls of 500 to 1,000 miles (~805 to ~1,609 km), which in turn face higher rates on a CRTM basis than “long” hauls of 1,000 miles to 1,500 miles. The difference is most pronounced between “short” and “medium” hauls and substantially disappears between shipment distances of 1,000 miles to 1,500 miles and shipments travelling 1,500+ miles (2,400+ km).

Thus, lower CRTM values do not mean that the long-haul rates are more "competitive"; in fact, they may be very uncompetitive and are often more profitable for a railway, certainly in terms of total margin per shipment.

The CPCS Report’s omission of distance is all the more glaring given that information regarding the average length of haul is publicly available for many of the jurisdictions it analyzed. In particular, the European Union reports a detailed breakdown of various metrics in respect of rail transportation in its member countries.<sup>26</sup> The FAIR Response summarizes in its Figure 2, which we have replicated below, the average length of haul for rail freight in 2021 (or the closest available period) in each country identified in the CPCS Report.

**Figure 2 - Figure 2 of the FAIR Response (Average Length of Haul for Countries in CPCS Report)<sup>27</sup>**

Country	Average Length of Haul (kilometres)
Canada – MRE (CN)	1,572
Canada – MRE (CP)	1,463
Canada (CN and CP, excluding shortlines)	1,469
Spain	417
France	378
Italy	232
Germany	344 (375 for DB Cargo)
United States – BNSF	1,869
United States – CSX	923
United States – KCS	701

Country	Average Length of Haul (kilometres)
United States – NS	925
United States – UP	1,460
CP (U.S. operations)	791
CN (U.S. operations)	542
India	585
Japan	667 for JR Freight
Russia	2,055
China <sup>28</sup>	696

## B. Traffic Mix

As the CPCS Report cautions, rail freight rates can vary significantly depending on commodity. Price differentiation between commodities may reflect any number of factors, such as the value of the commodities, or commodity-specific handling requirements, for example.<sup>29</sup>

CN and CP also routinely point to changes in traffic mix to explain changes in average CRTM values for specific commodity groupings.<sup>30</sup> Indeed, CN’s and CP’s financial reports illustrate how widely average CRTMs vary among commodity groups. In 2021, CN realized an average CRTM from all traffic of 5.96 cents, while CRTMs from CN’s different commodity segments ranged from 3.35 cents to 24.05 cents (all values in CAD).<sup>31</sup> Similarly, for 2021, CP reported an average CRTM of 5.22 cents for all traffic, with CRTMs from different commodity segments ranging from 2.78 cents to 21.30 cents (all values in CAD).<sup>32</sup>

With this level of variability in CRTMs on a single railway, no credible statistical conclusions can be drawn from “average” Canadian rates or CRTMs. The problem is only compounded if those average CRTMs are then compared to averages in other countries, especially those with vastly different traffic mixes and lengths of haul, among many other reasons.

As the proportion of commodities commanding rates per RTM at the high end of the range in the overall traffic mix increases, so will average CRTM on all traffic. Accordingly, without a commodity-by-commodity analysis, a comparison of average freight rates on all traffic runs the risk of reflecting differences in traffic mix rather than any quantifiable difference in rates paid in different jurisdictions for similar traffic.<sup>33</sup>

Neither RAC’s *Rail Trends 2022* nor most of the publicly available sources provide revenue data on a commodity group basis for the jurisdictions the CPCS Report analyzes. However, CN<sup>34</sup> and CP<sup>35</sup> as well as Spanish railway Renfe Mercancias Sociedad Mercantil Estatal, S.A. (“**Renfe**”)<sup>36</sup>, which is one of the railways the CPCS Report analyzes, publicly reported both traffic volumes (in RTM or RTK) and revenues by various business segments for 2021. Steel, automotive traffic and intermodal traffic together made up 80% of Renfe’s freight volumes by RTK in 2021. Of CN’s and CP’s combined traffic volumes in 2021, only 33% consisted of metals and minerals (which includes steel), automotive and intermodal traffic combined. Figure 3 below replicates the FAIR Response’s analysis of the potential impact of the difference in traffic mix on overall average CRTMs.

CN’s and CP’s combined average CRTM in 2021 was 5.67 cents (CAD), with the three broad commodity categories commanding rates per RTM ranging from 4.96 to 22.88 cents (CAD).

**Figure 3 - Figure 3 of the FAIR Response (CN and CP 2021 Freight Revenue per RTM For Select Segments)**

<b>Metric</b>	<b>CN</b>	<b>CP</b>	<b>CN and CP Total</b>
Revenue ton-miles – all traffic (millions)	233,138	149,686	382,824
Metals, minerals and consumer products	26,743	11,170	37,913
Automotive	2,395	1,765	4,160
Intermodal	58,412	27,704	86,116
Other	145,588	109,047	254,635
Revenue - all traffic (million CAD)	13,888	7,816	21,704
Metals, minerals and consumer products	1,548	728	2,276
Automotive	576	376	952
Intermodal	4,115	1,724	5,839
Other	7,649	4,988	12,637
<b>CRTM - all traffic (CAD)</b>	-	-	<b>5.67</b>
<b>Metals, minerals and consumer products</b>	-	-	<b>6.00</b>
<b>Automotive</b>	-	-	<b>22.88</b>
<b>Intermodal</b>	-	-	<b>6.78</b>
<b>Other</b>	-	-	<b>4.96</b>

Based on reported traffic volumes for 2021, Renfe transported a total of 5,638.3 million RTK of traffic, of which 28.9% was steel (1,627.2 million RTK), 6.4% was automotive (359.1 million RTK), 44.8% was intermodal (2,525.5 million RTK), and 20.0% was other (1,126.0 million RTK).<sup>37</sup> Assuming the same traffic mix as reported by Renfe for 2021, but applying it to the aggregate traffic volume of CN and CP and using their combined CRTM for each commodity category, produces an average CRTM of 7.22 cents (CAD) for CN and CP, as shown in Figure 4 below:

**Figure 4 - Figure 5 of the FAIR Response (CN and CP Average CRTM Using Renfe Traffic Mix)**

<b>Commodity Type</b>	<b>Renfe 2021 Traffic Mix (By RTK)</b>	<b>Imputed CN and CP Combined Volumes (million RTMs) Based On Renfe Traffic Mix</b>	<b>CN and CP Combined Average CRTM (CAD) By Commodity Group</b>	<b>Imputed Revenue (million CAD) Based On Renfe Traffic Mix</b>
Metals, minerals and consumer products	28.87%	110,516	6.00	6,635
Automotive	6.37%	24,382	22.88	5,580
Intermodal	44.79%	171,474	6.78	11,627
Other	19.97%	76,452	4.96	3,794
<b>Total:</b>	<b>100%</b>	<b>382,824</b>	<b>-</b>	<b>27,635</b>
<b>Resulting CRTM (CAD):</b>				<b>7.22</b>

Adjusting only the traffic mix (and not length of haul, for example) to mirror that of a rail carrier in another country would raise the average CRTM of CN and CP (combined) by over 27% (from 5.67 to 7.22 CRTM), thus highlighting the effect of failing to account for traffic mix.<sup>38</sup> Rather than ensuring that traffic from all

countries is compared on the same basis, the CPCS Report's methodology relies exclusively on highly aggregated comparisons of average rates on all traffic, which simply serves to hide these differences. Absent a more robust and detailed analysis that includes a consideration of traffic mix, it is impossible to draw any meaningful conclusions from such international rate comparisons.

### C. Operating Parameters

The CPCS Report makes no attempt to address the variety of operating parameters that impact the efficiency of a railway's operations. Many of these have a direct and pronounced impact on a rail carrier's operating costs and pricing. The FAIR Response addresses some of the more significant differences in operating parameters among the various countries the CPCS Report compares, as summarized at a high level below.

#### Unit Trains

The CPCS Report does not address the extent to which bulk traffic travels in manifest trains (mixed railcar types) versus much more efficient unit train traffic.<sup>39</sup> All else equal, unit train operations decrease the cost per ton-mile of unit train shipments. In Canada, CN and CP transport virtually all coal and export potash traffic, and certain other commodities in unit trains, which typically consist of well over 100 railcars per train. The CPCS Report is silent regarding the extent to which rail carriers in other jurisdictions use unit train models, though it would be impossible for rail carriers in Europe to operate unit trains as long as typical unit trains in Canada.<sup>40</sup>

#### Train Length

Both CN and CP operate significantly longer trains than freight railways in Europe and are thus more efficient on a per car basis. The RAC reported an average train length of 121 cars in 2021 for Canadian railways, which includes unit trains and manifest trains.<sup>41</sup> The weighted average train length for U.S. Class 1 rail carriers in 2021 was only 81 cars.<sup>42</sup> In Europe, freight trains max out at 740 metres (~2,428 feet) in length and sometimes 835 metres (~2,740 feet).<sup>43</sup> At 740 metres, a typical European freight train is only ~30% and ~28% as long as an average CP and CN freight train, respectively.

These operational constraints in Europe and elsewhere outside Canada contribute to a much higher cost structure that is reflected in CRTM measures and is not at all comparable to rates or CRTMs in Canada. All other things being equal, the number of train crews required to operate a train a specified distance is the same regardless of whether the train has 120 cars or only 25.<sup>44</sup> On a per ton-mile basis, however, the labour costs associated with the short train will be much higher. The CPCS Report does not mention this issue.

#### Train Weight

Freight trains in Canada are far heavier than in various other jurisdictions identified in the CPCS Report, particularly Europe. For 2021, the RAC reported an average train weight of 9,279 tons (8,418 metric tonnes).<sup>45</sup> By contrast, Germany's DB Cargo reported carrying just 502 metric tonnes per train in 2021.<sup>46</sup> Freight trains in Canada are simply not comparable to freight trains that are this short and light.

#### Railcar Capacity / Axle Load

The maximum axle load that railway track can support drives the amount of lading each railcar can carry and is another critical factor the CPCS Report ignores.<sup>47</sup> The inclusion of intermodal and automotive traffic, both of which tend to be significantly lighter per carload than bulk traffic, in the public reporting of railways both in North America and elsewhere, renders a carrier-level or jurisdiction-level analysis of average lading weight per railcar meaningless.<sup>48</sup>

Other Operating Parameters

Vertical clearance and car block size are two more operating parameters that the CPCS Report ignores.<sup>49</sup>

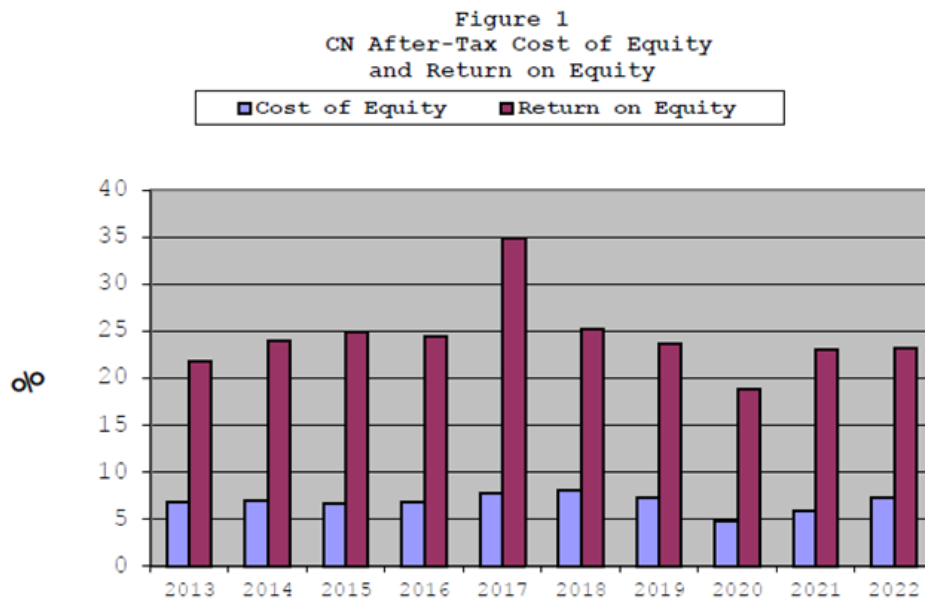
**3) Revenue Adequacy**

The RAC makes several unsubstantiated claims about Canadian rail freight rate levels and competitiveness. However, the CPCS Report does not report or assess the revenue adequacy of any carrier or examine whether any carrier is earning in excess of its cost of capital.

The Gould Report observes that “CN has achieved returns that exceed its cost of capital in each year and is currently earning far in excess of its cost of equity capital” and that “CN’s financial performance is clearly far beyond the level required for it to be financially viable”. The Gould Report calculates for CN that “For the entire period 2013-2022 the total excess income was \$36.1 billion.”<sup>50</sup>

Figure 5 below replicates Figure 8 of the FAIR Response (Figure 1 of the Gould Report), which demonstrates that CN’s return on equity exceeded its after-tax cost of equity by a significant amount in each year from 2013 through 2022. The Gould Report observes that CN’s 2022 “after-tax return on equity was 23.2%, 3.2 times the 7.33% level determined by the CTA [Agency] to be the amount needed for CN to be financially viable”.<sup>51</sup>

**Figure 5 – Figure 8 of the FAIR Response (Figure 1 of the Gould Report)**

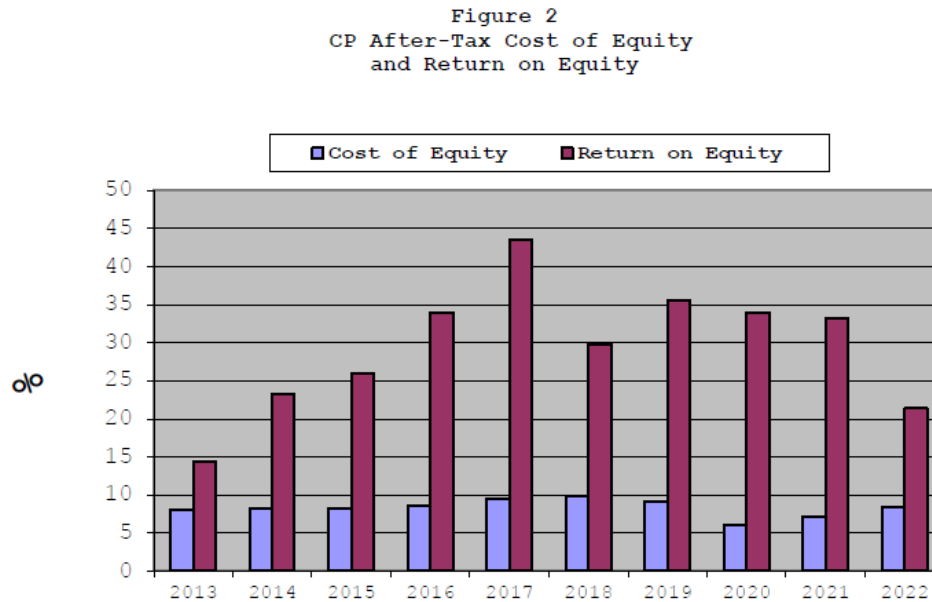


The Gould Report reaches similar conclusions for CP. In particular, the Gould Report observes that “CP has achieved returns that exceeded its cost of capital in each year for the period 2013-2022” and that “CP’s financial performance is clearly far beyond the level required for it to be financially viable”. The Gould Report calculates that CP’s “total excess income for the entire period 2013-2022 was \$17.7 billion.”<sup>52</sup>

Figure 6 below replicates Figure 9 of the FAIR Response (Figure 2 of the Gould Report), which demonstrates that CP’s return on equity exceeded its after-tax cost of equity by a significant amount in each year from 2013 through 2022. The Gould Report observes that CP’s 2022 “after-tax return on equity was 21.43%, 2.6 times the 8.35% level determined by the CTA [Agency] for CP to be financially viable”.<sup>53</sup>



**Figure 6 - Figure 9 of the FAIR Response (Figure 2 of the Gould Report)**



Dr. Gould observes that all of the foregoing is consistent with the significant growth in the share price of both CN and CP over the period 2013-2022, as demonstrated in Figure 10 of the FAIR Response.<sup>54</sup>

#### 4) Economic Harm

Among a multitude of other economic analyses that are too lengthy to summarize in this paper, the Gillen Report observes that rail rates set higher than the cost of providing the service (including a return on capital) reduces the profitability of the shipper's product, which results in too little of the product being produced relative to what the shipper would produce if rail rates were set in a competitive market. That reduces economic welfare and harms Canada's economy.<sup>55</sup>

#### Conclusion

The CPCS Report falls far short of establishing a credible basis for comparing railway freight rates internationally. The differences between national average rail freight rates shown in the CPCS Report are to a large extent a reflection of different average lengths of haul. In addition to shipping distance, differences in factors such as traffic mix and other characteristics of rail movements in various jurisdictions affect not only individual shippers' rates but are sufficiently pronounced and broad-based to affect national averages. Aggregating individual rates on a national basis cannot correct for these differences in a way that makes national comparisons valid, as shown above.

The conclusions RAC and others urge in respect of the CPCS Report are even more misleading. The CPCS Report contains no useful information and allows no useful conclusions whatsoever regarding the competitiveness of rail freight rates in Canada relative to any other jurisdiction. Further, the available evidence demonstrates that CN and CP are and have been charging rates well in excess of those that would prevail under conditions of effective competition.

Evidence-based policy making demands more rigorous analysis than the CPCS Report provides. Rail freight shippers, as well as the national economy, need effective, efficient and competitive rail rates and

service to optimally exploit otherwise locked-in resources, justify infrastructure and other capital spending, and compete against suppliers in global markets.

## Endnotes

---

<sup>1</sup> © 2024, Ryan Gallagher, Lucia Stuhldreier, and François Tougas. Any opinions expressed herein are those of the authors and do not necessarily reflect the views of the FAIR Rail Coalition.

<sup>2</sup> Ryan Gallagher practices transportation and competition law at McMillan LLP. Lucia Stuhldreier practices transportation law at McMillan LLP. François Tougas practices transportation and competition law at McMillan LLP and is Adjunct Professor in Competition Law & Policy at the University of British Columbia, Faculty of Law.

<sup>3</sup> Available online at: <https://www.railcan.ca/wp-content/uploads/2023/02/International-Comparison-of-Railway-Freight-Rates.pdf>.

<sup>4</sup> The Fair Rail Coalition is a coalition of shipper organizations and stakeholders from all of the major bulk commodity segments in Canada.

<sup>5</sup> The CPCS Report refers to “CP” in its form before the merger between Canadian Pacific Railway Limited with Kansas City Southern Railway Company to form Canadian Pacific Kansas City Limited. The FAIR Response maintains the “CP” terminology throughout for consistency and ease of terminology; this paper maintains that terminology.

<sup>6</sup> The FAIR Response can be found at: <https://www.fairrail.ca/>

<sup>7</sup> Dr. Gillen is Professor Emeritus at the University of British Columbia, former professor at the Sauder School of Business, Operations & Logistics Division, and former Vancouver International Airport Chair in Transportation Policy and Management Director, Centre for Transportation Studies. Dr. Gillen was engaged to identify the relevant economic concepts and to comment on the CPCS Report’s methodology and results. Dr. Gillen’s report (the “**Gillen Report**”) can be found at Schedule “A” to the FAIR Response.

<sup>8</sup> Dr. Gould is Senior Scholar at the Asper Business School at the University of Manitoba, a renowned expert in corporate finance, and Director, Centre for International Business Studies and Vice-Chair, Canadian Consortium of Management Schools. Dr. Gould was engaged to examine CN’s and CP’s investment, cost of capital, and financial viability. Dr. Gould’s report (the “**Gould Report**”) can be found at Schedule “B” to the FAIR Response.

<sup>9</sup> RailState LLC is a firm specializing in rail cost, rail rates, competitive/captive assessments and rail-shipper negotiations. RailState was engaged to analyze a variety of items including the extent to which different operating parameters, such as haul distance, traffic mix, unit trains versus manifest trains, train length and weight, railcar capacity, and other relevant factors, impact rail pricing and costs. RailState’s report (the “**RailState Report**”) can be found at Schedule “C” to the FAIR Response.

<sup>10</sup> RAC news release dated March 28, 2023: <https://www.railcan.ca/news/canadas-railways-respond-to-budget-2023/>.

<sup>11</sup> RAC blog in respect of the CPCS Report: <https://www.railcan.ca/blog/canadian-freight-rail-low-price-winners-in-the-global-context/>

<sup>12</sup> RTM means one short ton of freight transported one mile and RTK means one metric tonne of freight transported one kilometre.

<sup>13</sup> CPCS Report, page 3.

<sup>14</sup> This graph represents actual revenue (base rate plus fuel surcharge) the railway generated from the shipper’s traffic, expressed using percentages to maintain confidentiality.

<sup>15</sup> The Rail Cost Adjustment Factor (A = Adjusted for Productivity Gains) is an index that the United States Surface Transportation Board approves and formulates to represent changes in rail costs over time. RCAF-A was approved for use by the federal government when CN bought BC Rail.

<sup>16</sup> CN news release, dated July 25, 2023 (Q2 2023 results): “*CN continues to assume pricing above rail inflation upon contract renewals.*”

<sup>17</sup> For a recent example, slide 92 of CP’s investor day presentation dated June 28, 2023 refers to “Inflation – Plus Pricing” on top of “Base Growth”.

<sup>18</sup> See page 18 of “Action. Collaboration. Transformation: Final Report of The National Supply Chain Task Force 2022”, released October 6, 2022, available at: [https://tc.canada.ca/sites/default/files/2022-10/supply-chain-task-force-report\\_2022.pdf](https://tc.canada.ca/sites/default/files/2022-10/supply-chain-task-force-report_2022.pdf).

<sup>19</sup> See discussion in the Gillen Report at pages 8 to 10, including the following on page 9: “Factor prices (rail rates) set higher than the cost of providing the rail service reduce the profitability of the shipper’s product being produced and distributed. This results in too little product being produced compared to what would be produced if markets were competitive or prices were set in factor markets such as those that competitive markets would produce. The lower output reduces economic welfare and, therefore, harms the economy.”

<sup>20</sup> CPCS Report, page 3: “Individual shippers may, of course, pay freight rates that are higher or lower than the average. Rail rates can vary significantly depending on many factors such as commodity, distance, and volume, among others.”

<sup>21</sup> See *Vision and Balance*, Report of the *Canada Transportation Act Review Panel*, June 2001 (<https://publications.gc.ca/collections/Collection/T22-107-2001E.pdf>). Page 68 states “...because of rate taper, revenue per tonne-kilometre would be lower for longer movements than for shorter ones”. Footnote 5 on page 98 expands: “In general, the two most costly components of any rail movement, on a per tonne-kilometre basis, are picking up traffic from a shipper’s siding and delivering it to the consignee’s siding or an interchange with a connecting carrier. By contrast, the line haul costs, on a per tonne-kilometre basis, are much lower. Because origin and destination switching costs are spread over more kilometres for longer movements, cost (and revenue) per tonne-kilometre decline as the length of movement increases. The above provides an illustration of rate taper.”

<sup>22</sup> *Railway Reform: Toolkit for Improving Rail Sector Performance*, World Bank Group, September 2017: [https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/railways\\_toolkit/PDFs/RR%20Toolkit%20EN%20New%202017%2012%2027.pdf](https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/railways_toolkit/PDFs/RR%20Toolkit%20EN%20New%202017%2012%2027.pdf). In particular, page 235 specifically cautions against indiscriminately “benchmarking” rates for traffic with different lengths of haul against each other and continues: “Average distance per journey can raise or lower unit price [*i.e.*, CRTM] because railways incur costs not only during hauling freight or passengers, but also at the start and the end of each journey. Thus, average freight tariffs and passenger fares are lower in large countries such as China, Russia, and the U.S.A. where starting and ending costs are a smaller proportion of much longer average journeys than, for example, in smaller countries such as Belgium. Without complete data on tariffs and fare schedules for both subject and benchmark railways, adjusting for this type of unit price differential is impossible.”

<sup>23</sup> For example, CN’s Q1 2023 quarterly review states on page 34: “higher freight revenue per RTM of 10% mainly due to higher fuel surcharge revenue as a result of higher fuel prices, freight rate increases, the positive translation impact of a weaker Canadian dollar and a decrease in the average length of haul.” CP’s public disclosure makes similar statements (*e.g.*, CP’s Quarterly Review for Q1 2018, pages 31-32).

<sup>24</sup> The STB Annual Rate Study is available at: <https://www.stb.gov/reports-data/reports-studies/>. The STB's website (<https://www.stb.gov/reports-data/reports-studies/>) states that the purpose of the STB Annual Rate Study is to "examine multi-year patterns of average railroad rates charged by the nation's railroads....".

<sup>25</sup> Figures 6, 11, and 13 of the STB Annual Rate Study contain very similar graphs for grain, chemical and intermodal traffic, respectively.

<sup>26</sup> Available for download at: <https://ec.europa.eu/eurostat/databrowser/explore/all/transp?lang=en&subtheme=rail&display=list&sort=category>.

<sup>27</sup> See the FAIR Response for sources used for this figure. Previous OECD reports identify similar discrepancies in average lengths of haul, particularly as between Europe and North America. For example, see L. S. Thompson and H. Bente (2014), "What is Rail Efficiency and How Can It Be Changed?", *ITF Discussion Paper 2014-23*, prepared for the Roundtable *Efficiency in Railway Operations and Infrastructure Management*, 18-19 November 2014, which is available at: [https://www.oecd-ilibrary.org/transport/germanywhat-is-rail-efficiency-and-how-can-it-be-changed\\_5jrw1kp34lbr-en](https://www.oecd-ilibrary.org/transport/germanywhat-is-rail-efficiency-and-how-can-it-be-changed_5jrw1kp34lbr-en). In particular, see Table 3 on page 28.

<sup>28</sup> The CPCS Report also calculates an average CRTM for China. In addition to the possible data issues identified in the CPCS Response, the Chinese state is heavily involved in freight rail in China, so it is impossible to determine the extent of state subsidy of the freight rail industry in China. For example, see the case study for China Rail in the 2017 World Bank report identified at endnote 22, at page 412: "Nevertheless, to date little capital has been purely private; most came from provincial governments and state-owned enterprises..." Accordingly, one must approach the CPCS Report's analysis of rail freight rates in China with caution.

<sup>29</sup> Page 235 of the World Bank report identified at endnote 22 acknowledges the phenomenon as follows: "Typically, railways charge lower tariffs for some low-value bulk commodities, such as coal, and higher tariffs for higher-value goods that require higher service levels, such as assembled automobiles."

<sup>30</sup> For example, CP's management discussion and analysis in respect of its Q1 2017 performance stated at pages 31-32: "Fertilizers and sulphur revenue was \$59 million in the first quarter of 2017, a decrease of \$22 million, or 27%, from \$81 million in the same period of 2016. This decrease was primarily due to lower volumes, particularly fertilizers, which have a higher freight revenue per revenue ton-mile, and the unfavourable impact of the change in FX. This decrease was partially offset by higher fuel surcharge revenue. The decrease in freight revenue per revenue ton-mile is primarily due to the lower fertilizer volumes."

<sup>31</sup> CN Annual Report 2021, pages 22 – 26.

<sup>32</sup> CP Annual Report 2021, pages 78 - 83.

<sup>33</sup> See the discussion in the RailState Report at pages 8-10 on the impact of traffic mix on average freight rates, and the importance of commodity-specific analysis.

<sup>34</sup> CN 2021 fourth quarter and full year earnings release dated January 25, 2022. See page 6.

<sup>35</sup> CP 2021 fourth quarter and full year earnings release dated January 27, 2022. See pages 13 and 14.

<sup>36</sup> See Figure 4 of the FAIR Response and Renfe's audited financial statements for the year ended December 31, 2021, which are available at: [https://www.renfe.com/content/dam/renfe/es/Grupo-Empresa/Gobierno-corporativo-y-transparencia/cuentas-anauales/renfe-mercancias/2021\\_Cuentas-Anuales\\_Informe-Gestion\\_Informe-Auditoria\\_MERCANCIAS.pdf](https://www.renfe.com/content/dam/renfe/es/Grupo-Empresa/Gobierno-corporativo-y-transparencia/cuentas-anauales/renfe-mercancias/2021_Cuentas-Anuales_Informe-Gestion_Informe-Auditoria_MERCANCIAS.pdf). In particular, see pages 19 and 20 of 34 of the enclosed management report (Informe de Gestión del Ejercicio 2021).

<sup>37</sup> See Renfe's audited financial statements for the year ended December 31, 2021.

<sup>38</sup> In this example calculation, the high automotive CRTM of CN and CP was applied to a larger share of the overall traffic while the relatively large share of CN/CP traffic consisting of lower value bulk commodities moving in highly efficient unit trains (and commanding CRTMs at the lower end of the range) was drastically reduced.

<sup>39</sup> A unit train is a train that stays assembled with its locomotives throughout the entire cycle from origin to destination and back.

<sup>40</sup> See page 15 of the FAIR Response for a more complete analysis.

<sup>41</sup> RAC Rail Trends 2022, page 23.

<sup>42</sup> As per RAC Rail Trends 2022, page 24, footnote 11, the average number of cars per train is calculated as reported car miles (loads and empties) divided by reported train miles using data from R1 Reports filed with the U.S. STB (see <https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/>).

<sup>43</sup> See pages 15 to 16 of the FAIR Response for a more complete analysis.

<sup>44</sup> In addition, see the RailState Report's discussion of the impact of train length on costs at pages 10-11.

<sup>45</sup> RAC Rail Trends 2022 (<https://www.railcan.ca/wp-content/uploads/2022/12/RAC-Rail-Trends-2022-EN.pdf>), page 23.

<sup>46</sup> DB Cargo's 2021 Integrated Report: <https://www.dbschenker.com/resource/blob/780838/3e8cd9940577b99a6ab72560fd096c30/integrated-report-2021-en-data.pdf>. See page 116.

<sup>47</sup> Page 24 of the World Bank report at endnote 22 states that axle load "is a critical measure of infrastructure physical capacity and strength".

<sup>48</sup> See pages 17 to 18 of the FAIR Response for a more complete analysis.

<sup>49</sup> See pages 18 to 19 of the FAIR Response for a more complete analysis. The CPCS Report includes no analysis of service levels, contractual terms associated with railway rates, the extent to which freight trains receive priority over passenger trains (or vice versa), the extent to which freight traffic subsidizes passenger traffic (which occurs in some jurisdictions), nor the extent to which railway infrastructure is under expansion or contraction, all of which are relevant to a rate analysis. See pages 19 to 23 of the FAIR Response for a more complete analysis.

<sup>50</sup> Gould Report, pages 13-14.

<sup>51</sup> Gould Report, page 13.

<sup>52</sup> Gould Report, page 16.

<sup>53</sup> Gould Report, page 16.

<sup>54</sup> See pages 14 and 16, and Tables 6 and 9 of the Gould Report.

<sup>55</sup> See endnote 19.