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Insufficient capacity?

A retrospective on the Canadian Transportation Agency's 2018-2019 freight rail investigation, and its implications for freight rail regulation in Canada

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Executive summary

During the winter of 2018-2019, the Canadian Transportation Agency launched a first-of-its-kind own-motion investigation into service issues with freight rail at the Port of Vancouver. This was prompted by allegations of congestion, as well as several embargoes (temporary restrictions on traffic) that CN and CP had imposed on freight rail traffic in the area. The own-motion investigation was meant to allow the Agency to get to grips with systemic issues that cannot be resolved within a single service complaint filed by a shipper. The investigation covered a wide range of topics, including congestion, embargoes, allegations of preferential treatment, communication issues, and a variety of shippers' concerns about quality of service.

In the end, the Agency determined that some embargoes imposed to deal with congestion (such as the ones applied by CP) were appropriate, while at the same time saying that CN's embargoes were not appropriate, based on the incidental detail of CN having communicated the embargo three months in advance. The Agency argued that such forward communication that embargoes may be coming, was evidence they were not an emergency measure and instead were a routine traffic control measure, which, it said, is not permissible. It concluded that CN breached its level-of-service obligations and by way of remedy or penalty CN was required to submit congestion plans for the winter peak season for three years going forward. This outcome and the process that led up to it did not satisfy many participants on any side of the case. There were persistent complaints from both shippers and railways that the investigation was rushed and confused, was too broad, and did not grapple with any of the difficult questions raised by stakeholders.

Our review of the investigation, using both publicly-accessible documents and interviews with key stakeholders, indicates that many of these complaints are well-founded. The research underpinning this report evaluated four types of debates: Diagnostic debates (about problems), prognostic debates (about solutions), motivational debates (about the desirability of solutions and justifications for their costs), and procedural debates (about the investigation process itself). In most of these categories, we find that the Agency's decision did not meaningfully address the crux of the issues that arose. Several key tensions were left unresolved:

- The investigation's focus was unclear, and its timelines simultaneously were too slow to have a meaningful impact on the congestion and embargoes, and too fast to carefully consider the evidence brought forward.
- There was no clear consensus or guidelines on what constituted sufficient evidence in a process like this.
- There was no clear articulation of how to distinguish an emergency or unexpected event from routine operations.

- Key questions about responsibility for infrastructure investment were left unanswered.
- Ultimately, the Agency failed to consider the subject of the investigation in the detailed, systematic way that these investigations are supposed to permit.

It is not the purpose of this report to express an opinion on any of the legal or technical issues discussed in the investigation or in the Agency's decision. However, a careful review of the investigation shows that there are serious problems with how the own-motion process is framed and structured, which will impede future own-motion investigations until they are meaningfully addressed. This research poses serious and challenging questions about the Agency's ability in its current form to tackle some of the complex technical issues it faces.

1. Introduction

During the winter of 2018 – 2019, the Canadian Transportation Agency ("the Agency", or "the CTA") conducted its first own-motion investigation in the railway sector. Whereas previously the Agency had been restricted to investigating specific level of service complaints by shippers, the own-motion authority, granted to the CTA in May 2018, empowered it to act of its own accord to investigate systemic issues (Canadian Transportation Agency, 2019a). The Agency got its first opportunity to test this power in December 2018, when shippers began alleging high levels of congestion, unfair imposition of traffic embargoes,[1] and generally poor service quality at the Port of Vancouver. Hearings and requests by the Agency for written evidence and data on these issues took place during the winter of 2019, and on 15 April 15, 2019, the Agency gave its ruling: Embargoes are to be used only as an emergency measure, and must not be a premeditated policy to manage or avoid congestion. As part of the ruling, CN, which had imposed the most controversial of the embargoes, was required to submit congestion management plans for the following three years. Other major railways operating in the Vancouver area did not receive any sanction (Canadian Transportation Agency, 2019b).

Most of the organizations involved in this process were dissatisfied with the investigation. Shippers and railways alike complained that the investigation faced procedural issues, that it lacked focus, that it was either too long or too rushed, and that the sanctions on CN were either too severe or not severe enough. While this might be seen as a sign that the regulators made an effective compromise (which, as the old adage goes, should leave everyone equally unhappy), it is telling that parties on opposite sides of the debates taking place in this investigation sometimes agreed with each other in their criticisms of the process. Since issuing this finding, the CTA has not initiated any further own-motion investigations.

Freight railways are an extremely important part of the Canadian economy, and the Port of Vancouver in particular is a critical interface that allows Canadian exports to reach world markets. Dysfunction in this system, or in the regulatory systems put in place to oversee it, can have severe consequences. This report therefore aims to develop a deep, detailed, and objective understanding of the ways in which the regulatory governance process functions, to determine the extent to which it is currently fit for its critical purpose, and in what ways it can be improved.

[1] A procedure by which the railway limits or bans traffic through a certain area

Using a methodology based on primary evidence from documents and interviews, it discusses how the Agency approached the investigation in 2018–2019, and discusses the extent to which the own-motion investigation powers, and the regulatory system more generally, functioned in practice. Of particular interest for this report is the question of the interface between political, regulatory, and technical aspects of the system: To what extent could the people and institutions charged with regulating a complex and evolving railway system fully appreciate and act on that complexity?

The following sections of this report walk through the events of the Agency's investigation, while going over their various successes and failures. Section 2 describes a methodology for this process, based on the theory of problem definition and framing outlined by Benford and Snow (2000), and describes the various sources used as primary evidence. Section 3 presents the findings that came from this research.

First, the report gives a chronological overview of the events leading up to the investigation, the investigation itself, and the aftermath. Then it presents a breakdown of how the investigative process grappled with four key types of "debates": Diagnostic (about defining and describing problems); Prognostic (about solutions to those problems); Motivational (about mobilizing resources to enact those solutions); and debates about the procedure used for the investigative process. Section 4 discusses some general themes that emerged from these debates, and finally, section 5 presents some conclusions.

2. Methodology

The research underpinning this report is mostly descriptive, with some interpretation of broad patterns. To do this, it is necessary to apply a heuristic to sort and categorize different aspects of the investigation. For this, Benford and Snow's (2000) theory of core framing tasks in social movements is useful, even if it is being applied in a way that diverges from the purpose for which it was originally intended.

Benford and Snow describe three *core framing tasks*, that is, three core types of arguments that social movements must make to achieve their objectives. The first is *diagnostic framing*. It concerns the essential nature of a problem that the social movement is attempting to put on the agenda. This includes the question of whether the problem exists at all, as well as detailed questions about its precise nature and root causes. The second framing task is *prognostic framing*, which concerns the appropriateness, effectiveness, and desirability of specific solutions. *Motivational framing*, the third framing task, is about generating support for the costs (in money, resources, political capital, etc.) of a chosen solution. Motivational framing efforts can hinge on emotional rhetoric, on an appeal to the consequences of leaving a problem unaddressed, on hero-or-villain narratives about some of the players involved in the problem or its solution, or on the fundamental duties of people or institutions that might be necessary to implement the solution. In addition to these three framing tasks described by Benford and Snow, this report will apply a fourth: *Procedural framings*. Struggles over procedural framings concern the appropriateness of the institutions and structures set up for resolving an issue of this general type.

All four of these framing tasks have two sides: One side that is arguing for change, and the other that is arguing to oppose it. So, for example, in the debates over diagnostic framing, shippers might try to point to congestion on the rail network and blame the railways for causing it, while the railways could either downplay the problem or deflect blame away from themselves (or, as they did in this case, both).

The core empirical task of this work was to identify the arguments used by railways, shippers, and other players in the investigation, and trace how they worked their way through the process; how other players responded to them, and, ultimately, which arguments were taken up by the Agency in its findings, and which others were ignored, downplayed, or rebuffed. For this, the research underpinning this report looked to two main empirical sources. The first of these were written. The Agency has made most of the written materials from this investigation available to the public on its website (Canadian Transportation Agency, 2019c). These include the Agency's initial announcement of the investigation; the written submissions made by shippers, railways, and other parties; transcripts of the oral hearings the Agency held on the 29th and 30th of January ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019; "2019 Vancouver Freight Rail Investigation Hearing - Day 2," 2019), and the various reports issued by the Agency throughout the process, including the final one which handed down its decision.

The second source of empirical information came from interviews conducted by the author. This shed light on some of the motivations, perceptions, and ideas from the various players in the investigation that they had been unwilling or unable to commit to written or oral evidence during the investigation itself. It was particularly valuable to get the various players' opinions on how the investigation proceeded. Prospective interviewees were identified from the written material relating to the investigation, and then were contacted via cold email.

This research strategy faced a persistent challenge given the confidentiality, high stakes, and ongoing legal disputes around the 2018-2019 investigation (which was unsuccessfully referred both to the Federal Court of Appeals and the Supreme Court of Canada). This meant that many documents available to the author were heavily redacted, and that much of the data that the Agency used for making its decision was not available to the author. It also led to some challenges in the interview process, since many potential participants (and particularly those who worked for the CTA) were unwilling to participate, or did not think that it would be legally advisable for them to say anything of interest. For those who did decide to take part, many did so on condition that they would not be quoted or even paraphrased. Nevertheless, the interviews provided valuable information and insights that could be used "on background", to shed greater light on the more detailed analysis applied to the written material.

3. Findings

This section presents the empirical findings of this research. It begins with a general background on the structure of railway transportation in Canada, and an overview of the events that played out during the 2018-2019 freight rail dispute. This provides a chronology for reference in the next section, which is organized according to different types of "debates" as well as the arguments that came out within them.

3.1 Overview of events

Despite strong manufacturing, technology, and service sectors, a large part of Canada's exports, and economic structure more broadly, rely on natural resources. This has some important infrastructural consequences. Commodities such as grain, ore, lumber, or crude oil, tend to be bulky and heavy, requiring expensive and labour-intensive handling to be moved overland to export terminals, where they can be shipped to importing countries. Often, this is done using railways. This means that the railways, and the terminals those railways service, are a critical backbone of the Canadian economy. Problems in this supply chain can have serious consequences for Canadian economic competitiveness.

The port of Vancouver and its surrounding area is home to some of the most critical transportation infrastructure in the country. Several railways operate in this area. CN, with tracks on the north shore of Burrard Inlet, and CP, on the south shore, carry grain, oil, forest products and other goods to the terminals where they are loaded onto ships, many of which are bound for lucrative Asian markets ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 29). Vancouver is also a northern terminus of the BNSF railway – a US-based line which reaches as far south as Mexico, and which carries a large amount of Canadian goods from Vancouver to American markets.

All of this means that Vancouver is something of a choke point. Sections of track such as the *Second Narrows Rail Bridge* sometimes become a capacity constraint and Thornton Yard on the south shore of the Fraser River can be particularly prone to congestion. This problem is especially acute during seasonal peak periods in the late autumn and winter when the country's grain harvest must be carried to market by rail, and when weather conditions are often a significant obstacle. As a result, it can be a challenge to maintain fluidity through the rail infrastructure in and around Vancouver. A feedback effect can occur, in which inbound trains stack up, occupying space that makes it harder for subsequent trains to move. In extreme cases, the result can be total gridlock. Careful management of inbound traffic is therefore necessary to ensure that trains continue to be able to move through these choke points.

Under normal circumstances, this management is undertaken by the railways themselves. The rail sector in Canada, however, has very little direct competition. Many shippers can move their goods only by rail, and can only access one of the two major national railways (CN and CP) to do so. To avoid any monopolistic abuses, therefore, railways are regulated under the *Canada Transport Act*. As common carriers, they have legal service obligations to shippers, which the Agency is empowered to enforce. Up until recently, the primary mechanism for this enforcement was what is known as the service complaint process: Shippers can appeal to the CTA to correct problems of insufficient or discriminatory service. In such cases the Agency exercises a quasi-judicial role, adjudicating the matter and stipulating and enforcing remedies.

Over time, however, this led to a common complaint that the regulator was able to address only those issues that could be boiled down to a specific service failure. Broad, system-level problems related to the railways' operations and interactions with other players in supply chains, were harder to investigate—an issue that shippers' organizations have been complaining about for some time. These organizations argued that the Agency should be given unconstrained power to investigate system-level problems associated with railway service that cannot be

reduced to a single narrow service complaint. Following precedent from the CTA's role in the aviation sector, the CTA was granted “own-motion” powers in 2018 by the *Transportation Modernization Act* (Parliament of Canada, 2018). This allowed the Agency to initiate an investigation on its own initiative.

A test case for this new power arose in the fall of 2018, as a record grain crop and forecasts of bad weather suggested that Vancouver would soon be facing a period of acute congestion. CN responded to this by announcing on the 21st of September 2018 that it would reactivate the Vancouver and Surrounding Area “Terminal Pipeline Management Program” in the peak season to come. What this meant for shippers was that they might soon be facing embargoes on the passage of some of the freight traffic through the Vancouver environs to the port.

While the word "embargo" calls to mind hostile political or even military acts, in connection with railway traffic the word has a less confrontational implication. An embargo, strictly speaking, is simply a restriction on a station or terminal that a railway imposes to control the passage of traffic through it. This could be done for many reasons, including physical damage to the infrastructure, security issues, or the anticipation of serious congestion and the need to maintain fluidity by preventing it. A railway wanting to limit the total traffic moving through a section of track can implement an embargo with permits, meaning that shippers must apply for the right to move cars on the track. A railway that wants or needs to stop traffic entirely will use an absolute embargo, which bans all traffic from a given area.

The potential embargoes that CN had warned of became a reality on 30 November 2018, when the railway began imposing a series of embargoes on traffic passing through Vancouver. The first, issued on 30 November, concerned traffic bound for the oilseed terminal Fibreco. A few days later, on 2 December, a second embargo was issued, concerning traffic bound for the New Westminster Interchange with BNSF. On 6 December, a third embargo was imposed on traffic destined for the Surrey Distribution Centre, and on 3 January 2019, another embargo was issued regarding traffic bound for Ray-Mont Logistics. CN justified these embargoes on the grounds of “high levels of railcars (loads and empties) for local customers”, which had forced them to “take extreme measures” (Canadian Transportation Agency, 2019b). On 10 December, CN imposed the most controversial of its embargoes in the Vancouver case, and in hindsight most important: A permit-less restriction on forest products that would last for nine days (“2019 Vancouver Freight Rail Investigation Hearing - Day 1,” 2019, p. 36). CP followed this by imposing three embargoes of its own on December 10th and December 21st, which the railway said had been made necessary by the impact of the CN embargoes on the interchanges between the two rail networks.

This all took place during a period of increasing congestion on the rail network at the Port of Vancouver, due at least in part to a bumper wheat crop and challenging weather conditions. While the precise severity and duration of these conditions is a matter of debate among parties to the investigation, it is clear that the slowing of traffic from the congestion, along with the embargoes, imposed significant costs on the shippers. Shippers were forced either to alter production schedules to pay for alternative transportation (such as by truck) if possible, or to accept costs such as demurrage fees charged by marine carriers. The details of shippers’ communication with the railways and with the CTA about these problems in December are murky and also

contested, but it does seem that there were calls for the Agency to do something about the problem.

This “something” began formally on 14 January, 2019, when the CTA launched an investigation into "possible freight rail service issues in the Vancouver area” (Canadian Transportation Agency, 2019a). The investigation was to take 90 days (the standard that had been established for level-of-service complaints) and was to be chaired by three members of the Agency: Chair and CEO Scott Streiner, and Members Lenore Duff and Gerald Dickie.

A brief digression is necessary at this point to discuss the skills and qualifications of these inquiry officers. An investigation of this sort, particularly one looking for broad, system-level findings, is by its very nature interdisciplinary. Investigators need expertise in technical and management subjects related to railway performance, like systems dynamics and industrial engineering, and also in the relevant areas of economics, business, policy, and law. Both of the two investigators whose credentials are readily available online are public servants, with experience working in several Federal government departments, including those dealing with scientifically and technically complex subjects. All three are highly educated, but none has a degree in any technical discipline. One of the three members of the panel has a PhD in political science, while the other two have master’s degrees in business, sociology, and anthropology. While they were undoubtedly backed up by additional staff, some of whom may have had technical expertise, the nature of this expertise and the role it played in the investigation is not possible to discern from the information available. There was no information available to indicate that other investigating team members from the Agency had expertise in technical subjects relating to the phenomenon of congestion. This suggests an important area for further inquiry.

The CTA began the process by sending out notifications to all major railways and shipping organizations inviting their participation. All participants were invited to send written submissions to the Agency, answer questions about the state of the railway system around the Port of Vancouver, and, for the railways, what they had done to mitigate congestion.

Many of the Agency’s requests to the parties in the investigation required large amounts of data on railway traffic and freight shipments, as well as on embargo and permit processes. This data was required to be submitted in a short time-frame: The request was formally issued on Monday 14 January, and the data was due three days later, on Thursday 17 January (Streiner et al., 2019a, 2019b, 2019c, 2019d, 2019d, 2019e, 2019f, 2019g, 2019h). In addition to timing, another issue at this early consultation stage was confidentiality: Much rail transport data, from both the shippers' and the railways' side, is commercially confidential and maintained in closely-guarded conditions because of implications both for competition, and, in the case of regulatory action, for potential retaliation against complainants. The CTA's policy on this was fairly strict: Parties submitting data to the investigation would have to apply to have their data remain confidential. This would have to include a legal rationale submitted along with the data. This created a risk for participants that they would submit data which they believed should be confidential, only to have their request for confidentiality denied, and the data made public, days later. The CTA granted some requests for confidentiality, but declined in the case of the Forest Products Association of Canada, whose request they found to be insufficiently substantiated (Streiner et al., 2019i). In response to its initial call for information, the Agency received replies from only a small handful of parties to the investigation. These were the two major Canadian railways, CN

and CP, as well as several industrial associations representing shipper groups: The Forest Products Association of Canada (FPAC) (Forest Products Association of Canada, 2019), and the Western Grain Elevator Association (WGEA) (WGEA, 2019).

The next big event in the investigation, which took place on the 29th and 30th of January, was an oral hearing in downtown Vancouver, when these parties with similar interests were invited to present their perspectives on the issue, and were then asked questions by the three CTA members discussed above. The structure of the process was confused and disorganized from the start. There was very little agreement among the various participants about the nature of the conversations they were supposed to be having. Some participants, such as terminal operator Ray-Mont Logistics, treated the hearing as a kind of information-sharing opportunity, giving presentations that contained detailed information about how the congestion and embargoes looked from their perspective. Others, such as the Freight Management Association, made adversarial legal arguments. The railways treated the process more like a conventional level-of-service complaint, and accordingly demanded specific evidence of alleged wrongdoing that, if warranted, they could contest. Participants from both the shipper and railway sides of the investigation mentioned in interviews with the author of the present study that they had no idea what to expect from the process.

This ambiguity led to frequent complaints about procedure, particularly from the railways, who objected to what they saw as the fast pace of the inquiry, the volume of data they were expected to provide, and the lack of specific accusations to which they could respond. This latter point reflected some real uncertainties about the burden of proof in the investigation, and about the specific role of the regulator: Was the Agency a judge, a jury, a prosecutor, or merely an investigator that searches for facts and understanding? If there were answers to these questions, they do not appear to have been clearly communicated to participants in the process.

The discussion, furthermore, was often unfocused, shifting from specific complaints about congestion and embargoes to broad condemnations of, or defenses by, the railways and their motivations. The justification for this dearth of consistent focus, according to the CTA and several of the shippers, was that this was an information-gathering exercise: The CTA was looking for evidence of system-level phenomena on which it could potentially act. The railways objected that this lack of focus did not give them any particular allegation against which they could respond or defend. Instead, there was a constant back-and-forth between the railways and the shippers over which forms of evidence were most valid, or what the evidence was supposed to be demonstrated in the first place. The issues that were raised and debated ranged from “pipeline management” (the practice of some shippers, and the absence of it by others, to match the traffic they send to terminals with the capacity of those terminals to receive it); to terminal capacity per se (particularly on the question of whether the terminals operated on a 24/7/365 basis); to communication, to evidence and confidentiality, and to the legal legitimacy of embargoes. Given that these issues had to be discussed by eleven distinct participants, many of whom gave lengthy presentations involving multiple separate stakeholders and experts, over a period of just two days, it is not surprising that the discussion of some of these topics was a little bit thin.

On February 6th, the CTA released an inquiry report (Canadian Transportation Agency, 2019c) identifying five themes:

- The differential treatment of certain commodities
- The imposition of embargoes or permits
- Railway operational issues
- Infrastructure
- Quality of communications

On the 8th of February, many parties to the investigation sent in supplementary evidence that had been requested during the proceedings, to answer specific questions raised by the Agency or to rebut arguments made by opposing parties. This began a lengthy process of further data gathering by the CTA. The Agency was particularly interested in the subject of terminal capacity, and sent out requests to several terminals in the Vancouver area asking for information on how much rolling stock they were capable of processing. The response to this request was sparse: Several terminals simply said that the information was not available. Those who did reply gave information which drew quick objections from the railways, who argued that it was insufficient to refute their (the railways') contention that embargoes were necessary to limit congestion. This is difficult to verify independently, as much of the data that was submitted has been redacted in the public versions of these submissions. It is also not clear that the data in question would shed sufficient light on such a complex system to enable a proper analysis of the many possible contributors to the congestion.

A particularly interesting development occurred on 22 February, when the WGEA submitted a letter that endorsed the railways' positions on the question of "pipeline management" (WGEA, 2019). The railways, in the hearing three weeks earlier, had argued that they were obliged to place embargoes with permits specifically on the pulp and paper sector, because this sector does not match the traffic volumes it sends to their terminals, with capacity available at those terminals when the loads are intended to arrive. A permitting system was therefore necessary, the railways argued, to avoid backlogs that would cause further congestion. The WGEA, responding to the debate over this, noted that grain shippers do manage their origin-to-terminal pipeline to avoid this kind of congestion; that they had assumed that every other shipper does the same thing; and that, now realizing the absence of pipeline management by some other shipper groups, they understood why CN might have wanted to impose an embargo.

On the 6th of March, the CTA issued its decision letter detailing the record as it existed to that point, and posed further questions to participants (Canadian Transportation Agency, 2019d). On the 15th of April, ninety-one days after the start of the process, the Agency released its final decision in the investigation. It took no action with respect to most of the items that shippers had complained about. While it noted that some of the testimony suggested that there may have been violations of service obligations, the Agency said there was not sufficient evidence to confirm the possibility. It therefore invited shippers to submit their own service complaints using the conventional process. The Agency also took no action against either CP or BNSF on the subject of embargoes. BNSF had not issued any embargoes during the period in question, and the Agency found that CP's embargoes were necessary emergency measures and therefore did not constitute a service violation.

For CN, however, the Agency found that the railway's embargo on pulp and paper products *had* been a violation, on the grounds that CN had announced the possibility of embargoes on 21

September (Canadian Transportation Agency, 2019b). This, the CTA argued, indicated that embargoes were being used as an ordinary traffic control mechanism, rather than as an emergency measure in response to unexpected events. The Agency forbade the railway from using embargoes in this way, and required CN to submit traffic management plans to the Agency in advance of every winter for the following three years.

Most of the participants in the investigation were not satisfied with the process that led to this outcome. CN, unsurprisingly, opposed the decision and made unsuccessful appeals to the Federal Court of Appeal and the Supreme Court of Canada to have it changed. But interviews conducted by the author reveal that most of the shipper organizations are not happy with the CTA's determination either. Many see it as having been a slap on the wrist against CN, which did little to address system-level problems in a way that they believed an own motion investigation should be designed to do. Some speculated that coming down against the pulp and paper embargo was simply an easy face-saving measure for the Agency, given that it was not able to find any evidence of more systemic service issues. Broadly, there is little confidence among shippers that this was an effective test case of the Agency's new powers.

3.2 Framing tasks analysis

This section will discuss the four core framing tasks discussed in section 2, as they occurred over the course of the Vancouver Freight Rail investigation. Rather than going over these debates sequentially, it will instead organize the discussion according to the core framing tasks discussed in section 2: Diagnostic, prognostic, motivational, and procedural framings.

By far the most complex framing task in this list was diagnostic framing, and so this section is divided into five subsections, representing five different areas of potential problems that were contested during the investigation. In each section, the emphasis is on what questions the Agency asked; what topics were brought up unprompted by participants in the process; which arguments were made; which arguments were dropped; and which arguments ultimately carried the day at the end of the process. The patterns revealed in this process are instructive about the effectiveness of the regulatory procedures used by the Agency in this investigation.

3.2.1 Diagnostic debates

There were five broad categories of problem that were contested during this investigation: Congestion, embargoes and permits, communication, service quality, and preferential treatment. The first two accounted for a significant majority of all the debates that occurred during the process.

3.2.1.1 Congestion

The CTA asked three primary questions about this, which were in turn the focus of most of the rest of the points made by the participants in the process: First, did any significant congestion actually occur? Second, if it did occur, what were its causes? And third: What, if anything, was done about it, and were these measures appropriate?

In trying to answer the first question, the investigation quickly got mired in disagreements over evidence with railways and shippers bringing forward different kinds. The railways pointed to

various service records they had set in the preceding year, and alleged that reports of bad hold-ups were anecdotal evidence that did not reflect a general pattern. Shippers, in response to this, pointed to various metrics including increases in cycle times, trip times, dwell times, order fulfillment, the number of cars not moving, or congestion at interchanges, as evidence of a general pattern. The Freight Management Association argued, in effect, that data was immaterial because *any* failure of the railways to deliver cars on time was, *ipso facto*, a breach of service obligations:

> "An embargo on a shipper's traffic means that a shipper's traffic is not delivered period. An embargo on a terminal means that the terminal receives no traffic from any shipper, and that all of those shippers' traffic is not delivered period. A shipper who is told that his or her permit is denied can ship no traffic, period. The use of embargoes and permits to deny service and frustrate business growth is unlawful." ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 18)

This led to contention over what kinds of evidence are necessary to establish the existence of problematic congestion. Railways frequently demanded specific data about individual service failures that shippers could point to. While some shippers did provide this kind of data (notably the WGEA and FMA, as listed above), other shippers were reluctant to provide this data on confidentiality grounds, and due to fear, they said, of retaliation from the railways. The Freight Management Association urged the Agency to respect that confidentiality, as "we fear that shippers will not meaningfully participate in this proceeding if individuals are forced to out themselves for the benefit of their industry" ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 126).

Contention over the causes of real or anticipated congestion centered on the question of whether this was a transient or chronic issue. The railways argued that the problems were transient, and were the result of one-off and at times unpredictable events, such as increased demand, weather, and market conditions ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, pp. 19, 29; "2019 Vancouver Freight Rail Investigation Hearing - Day 2," 2019, p. 267). The shippers replied that the railways should have been able to deal with issues such as weather and excess demand, as these are regular seasonal occurrences that should be relatively easy to predict and plan for (Canadian Transportation Agency, 2019d, p. 136). This topic also entailed a lengthy debate about how to properly measure terminal siding capacity, and whether the lack of terminals operating on a 24/7/365 basis is a relevant consideration ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, pp. 29, 59, 61, 84). On this point, the railways were somewhat backed up by one major terminal operator, Ray-Mont Logistics, who pointed to factors on the maritime leg of the supply chain, where delayed vessels could cause gluts and shortages of containers and rail cars. This point was largely ignored by the Agency: In the final analysis, there was no detailed exploration done, and no conclusion reached, about the role that marine performance may have played in the service problems the Agency was investigating.

On the question of what was done about congestion, or what could be done about it, there was another major evidentiary debate. Railways talked about the measures they had undertaken to cooperate during the peak congestion period, to share rolling stock and power with each other, and to communicate with customers about supply chain management ("2019 Vancouver Freight

Rail Investigation Hearing - Day 1," 2019, pp. 9, 30, 84). But shippers were quick to point out things that the railways could have done, but did not. This often centered around investment. Shippers argued that the railways' financial incentives made them under-invest in infrastructure, in rolling stock, or in crews. This, shippers effectively said, limited the throughput capacity of railways and made the risk of congestion occur at lower levels of traffic ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, pp. 143–144). One shipper organization argued in an interview with the author that this is the kind of behaviour that only a monopoly can get away with.

The critical point here was the question of whether CN, and to a lesser extent, the other railways, could have taken reasonable steps to avoid, mitigate, or adapt to problems in any other way than they did. Despite the importance of this question, there was very little discussion, from any side, about what could or should be done. The point about investment was more specific, but given that new railway infrastructure takes years to build, and is also, as the railways pointed out, constrained by many financial and geographic realities ("2019 Vancouver Freight Rail Investigation Hearing - Day 2," 2019, p. 286), it is hard to see how investment would have been a solution to the short-term congestion faced by the railways in the winter of 2018-2019, although investment in rolling stock and crews might be one answer to this.

Ultimately, the CTA agreed with the railways on question of evidence, arguing that there was evidence of a problem, but not sufficient enough to prove wrongdoing on the part of any of the railways. The Agency invited shippers to bring forward individual complaints with specific data, using the regular complaints process.

It is difficult to read this outcome as a massive success for either side, since the entire point of the own-motion investigation was meant to be to uncover evidence of system-level issues that are bigger than any single level of service complaint. In practice, this system-level investigation turned out to be fairly mushy, without enough specifics to find in favour of either the railways or the shipping organisations. Instead, the Agency largely dropped this point, apart from the one small remedy it did impose, in the form of planning requirements for CN.

3.2.1.2 Embargoes and permits

Shippers and terminals both had a lot of complaints that the railways had imposed serious costs on them as a result of the embargo system through red tape, unpredictability, demurrage fees, or the need to arrange alternative shipping for their products. The railways argued that there was no evidence that embargoes or permitting processes had affected shippers' bottom lines, pointing out that there were more permits available during the embargo processes than shippers had actually requested ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 38). The shippers replied that this was a bad metric, mainly because sometimes they (shippers) had to arrange alternative transportation to avoid the risk of not being given permits when requested. The CTA's final decision letter indicates an agreement with this latter argument (Canadian Transportation Agency, 2019b).

More generally, shippers argued that the embargoes reflected a failure on the part of railways to avoid or deal with congestion at all, which, they said, could ultimately be explained as an abuse of the railways' market power. The Freight Management Association, as discussed above,

argued that embargoes are always illegal, because they constitute a deliberate denial of common carrier obligations. The railways pointed out that because of a Supreme Court decision (Patchett 1959) their common carrier obligations are always subject to considerations around reasonability.

The railways' narrative on the subject was that embargoes are a way to avoid or mitigate congestion rather than a cause of it. In effect, they were arguing that excessive traffic density on the network could bring movement to a standstill, while shippers objected to denial of their access to the railway network under any conditions at all. On the first day of the hearing CN noted:

> "You'll hear the word 'embargo' a lot over the next two days. And while the word embargo can have a negative connotation as it is used to describe a halt to movement. We call this a full embargo. An embargo with permits is something quite different. An embargo with permits is an effective and commonly used tool to maintain network fluidity… I can assure you that when we apply an embargo with permits, it is not our intention to impede traffic flow but rather it is our intention to enable traffic flow." ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 80)

Railways argued that embargoes are sometimes necessary to preserve track fluidity and operations, to manage traffic at interchanges, and to reduce "ghost bookings" (which occur when shippers book more cars than they actually need, as a way of securing additional rolling stock during times of shortage). There was some debate about whether ghost bookings ever actually occur, but it is interesting to note that on this point, terminal operator Ray-Mont Logistics backed up the railways' narrative ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 104).

On the subject of the forest products embargo, the railways pointed to the question of "pipeline management". They explained the embargo on forest product traffic on the grounds that the forest products industry, unlike other shippers, did not coordinate its shipments with terminal capacity in the same way that other industries did. To avoid having trains stack up on sidings in Vancouver, therefore, it was necessary to manage forest products traffic using a permitting system. CN's representatives described this on the second day of the hearing:

> "These customers and terminals have not and will not take the steps to make sure the inbound flows match the unload capacity before they release their traffic. For example, one pulp terminal had daily requests for shipments that were double their daily unload capacity. So CN is forced to take on the role of pipeline manager to make sure there is space at the terminal to receive the cars. If we take no steps, a multitude of traffic flows into the destination terminal and sits waiting to unload, transforming our operating yards into parking lots." ("2019 Vancouver Freight Rail Investigation Hearing - Day 2," 2019, p. 269)

The WGEA, representing grain shippers seemed roughly to agree with this point, submitting a memo on 23 February as mentioned above (see section 3.1).

The Agency's final determinations on the subject of embargoes and permits agreed in large part with the railways' rationale. All the CP embargoes, and all but one of CN's embargoes, were

found to be legitimate and justified on the grounds of traffic management during a time of transient congestion (Canadian Transportation Agency, 2019b). The one exception to this, however, was CN's embargo on pulp and paper traffic, which it found was a breach of the company's level of service obligations (Canadian Transportation Agency, 2019b). In arriving at this conclusion, however, the Agency did an end-run around the various legal and technical debates that occurred during the process, and simply found that because CN had warned about this permitting process three months in advance, that this meant it was not a response to unpredictable congestion, but was instead an illegal pre-emptive measure. This point was not widely discussed by either shippers or railways during the investigation itself, and so it appears that the Agency's actions were not a response to any of the actual discussions over which it presided. It is also notable that the Agency did not investigate the question of whether the railways' traffic-forecasting capabilities would allow them foresee the likelihood of congestion arising three months ahead—a question which is at the crux of the Agency's determination that CN was using embargoes as an ordinary traffic control mechanism.

3.2.1.3 Communication

A subordinate theme was the effectiveness of railway communications with shippers and terminals. Shippers highlighted important gaps in communication, which led to serious issues with their operations ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 185). These applied to more than just the status of embargoes. Representatives of grain shippers, for example, complained that miscommunication about operational issues created problems for blending different kinds of grain correctly to meet customers' orders.

It is unclear what systemic evidence or data on the subject of communications would look like, since communication issues are often qualitative in nature rather than quantitative. But as with many of the other issues, this led to a fundamental impasse: Shippers complained of persistent and costly issues, while railways simply asked for more data.

There were no meaningful mentions of communication in the CTA's ruling on this matter, unless one counts the Agency's logic on CN having informed shippers about the forest products permit process in advance—a case in which, perversely, CN might have avoided the Agency's ruling against it by being less transparent. Apart from that one outcome, this theme largely fizzled out.

3.2.1.4 Preferential treatment

The fact that the CN embargo imposed on 10 December included only the forest products sector brought out concerns from many shippers, and from the Agency itself, about the potential that preferential treatment might have been taking place, with the railways privileging certain shippers over others.

The biggest focus on the part of shippers, and the railways responding to shippers' allegations, was about the embargo process. This area was where some of the most serious allegations against the railways occurred, with the Forest Products Association of Canada in particular essentially accusing the railways of discriminating against forest products, not only with the embargo, but also with a general lack of effective service to that industry ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 194). This led to another evidentiary debate, over the extent to which reduced deliveries of forest products were due to market conditions or poor

railway performance ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 265). The aforementioned issue of "pipeline management" also came into play here, with CN arguing that it had to impose permits on the forest products sector because of the latter's lack of a pipeline management system.

A core issue was the blurry line in how exactly discrimination is defined, and the relationship between treatment that discriminates between different specific *shippers*, treatment that discriminates between different *types of railway service or commodities*, and treatment that discriminates between shippers on the basis of whether or not they *manage their own pipelines.* Shippers claimed that railways under-invested in certain kinds of rolling stock used for less profitable cargo as a way of discriminating against those shippers.

This discussion may have played a role in the Agency's ultimate finding in the investigation, because its finding against CN focused largely on the railway's permitting process applying disproportionally to pulp and paper traffic. However, allegations of discrimination did not play a role in the Agency's logic for the finding.

3.2.1.5 Service quality

The final diagnostic debate in the investigation was about detailed complaints over the amounts and ways in which the railways were providing service to their customers. Shippers alleged that the quality of service provided by the railways was insufficient or problematic and was not being remedied or even taken seriously by railways despite shipper complaints.

One such complaint showed up repeatedly from grain shippers, who complained in the investigation process about trains being broken up and arriving out of sequence, as discussed above. CN said that it was open to dealing with this concern, but that to the best of its knowledge it had not been raised before.

The Agency agreed broadly with the railways' arguments on broad issues of service quality, concluding that there was insufficient evidence to support any of the allegations, even though it did acknowledge that some of the shippers' allegations were serious cause for concern. The Agency therefore invited the shippers to submit specific service complaints. In this way, the CTA somewhat fell short of the promise that an own-motion investigation would allow the Agency to uncover system-level issues, and simply fell back on the conventional service complaint process.

The topic of service quality is somewhat artificial; it contains mostly a grab-bag of largely unrelated complaints. But its very existence points to the lack of focus of the own-motion investigation. Shippers took the process as an opportunity to raise concerns on a broad spectrum of issues. In principle this is not necessarily unreasonable. However, the Agency does not appear to have had the resources or competencies to assess this list of concerns, particularly in a 90-day time window.

3.2.2 Prognostic debates

Discussions about solutions to the problems raised above were generally fairly limited, with the proposed solutions serving mainly a rhetorical function. Shippers proposed solutions to illustrate things that the railways could be doing to solve problems but were not. Railways pointed

to possible solutions which might help but which were outside their own control. For example, the representatives of railways commonly suggested that more terminals should be operated on a 24/7/365 schedule to reduce backlogs. Shippers argued that this was largely already happening, setting off another evidentiary dispute ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 181; "2019 Vancouver Freight Rail Investigation Hearing - Day 2," 2019, p. 293). The CTA asked terminals to submit data regarding their capacity, but this simply moved the problem back one step in subsequent rounds of written submissions from railways and shippers, with the two sides disagreeing about the validity and usefulness of the terminal capacity data that the CTA had asked for, and that the terminals had provided.

Another debate occurred over infrastructure, with the two sides disagreeing about how much infrastructural expansion is actually possible in the Greater Vancouver area ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, pp. 145, 230). Railways frequently pointed out that the necessary land was in short supply in and around the terminals and yards in Vancouver. Thornton Yard, for example, is "landlocked between the Fraser River and Highway 7 to the south and Highway 17 to the north. There is no more room to build tracks." ("2019 Vancouver Freight Rail Investigation Hearing - Day 2," 2019, p. 286). Shippers sometimes retorted by suggesting that railways could add capacity by adding locomotives and crews on existing tracks, but this would assist only if there were enough clear track to allow the extra movements. Money was another scarce resource that the parties debated. Not only was there debate over how much the railways should be expected to spend on infrastructural improvements; but FPAC also called for government investment in Vancouver's port infrastructure (Forest Products Association of Canada, 2019).

Some of this discussion came down, implicitly or explicitly, to questions of motivation. This is well-illustrated by CN's proposal for a good-faith discussion, mediated by the CTA, to determine how the existing infrastructure could be used more efficiently and reduce these kinds of problems (Canadian Transportation Agency, 2019e, p. 293). Neither shippers nor the CTA seriously engaged with this idea, however. Their narrative held that the railways' economic interests were fundamentally opposed to this kind of collaboration. Shippers posited that the railways wanted to maintain a very high rate of asset utilization for the sake of their profit margins. CN in particular, shippers said, simply needed more surge capacity to be able to handle congestion events. One participant in the interviews with the author put a very fine point on the fact that winter occurs every year, yet the railways continue to decide not to invest to prepare for it. The implication from the shippers was that the Canada Transport Agency should use state authority to force greater investment ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, pp. 143–144).

The most controversial of the solutions proposed for congestion was to use the very embargo and permit system that was a major item in the shippers' allegations against the railways. Embargoes, railways argued, are a standard managerial solution to congestion events in all kinds in all industries, and, from the regulatory point of view, should be allowed to remain in the railway companies' toolbox. This, they argued, was particularly important for industries where shippers do not manage their own pipelines, as was alleged about the Pulp and Paper industry. Some shippers claimed that railways have an obligation to meet their service obligations, and should be prepared to do so without relying on embargoes and permits ("2019 Vancouver

Freight Rail Investigation Hearing - Day 1," 2019, p. 104) no matter the aggregate level of traffic. A representative from Ray-Mont logistics, which operates several terminals in the Vancouver area, offered a third perspective: Embargoes, he argued, are useful, but are badly implemented. He proposed removal of red tape to better streamline the process and reduce the costs and unpredictability it imposes on shippers ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019).

All in all, there was very little resolution to any of these debates about solutions, and indeed there were few substantive proposals for solutions at all, apart from demands from shippers that the Agency act to protect shippers' interests, or from railways that the Agency leave the management of their network mostly untouched. Generally, the railways, shippers, and other participants talked past each other on these points.

The Agency's determination at the end of the process illustrates a partial acceptance of the logic of both sides. They did, in a small way, take up the demand that some shippers had placed on them, to be a regulatory counterweight to the railways' commercial interests. But their prescriptions here were fairly mild, and not well-connected to the discussions. Their new rules for embargoes and permits did follow requests from some shippers, but the requirement for planning that they imposed on CN was not meaningfully discussed as a remedy by any player either during the investigation itself, or in subsequent interviews with the author. There was no serious uptake of any of the railways' or shippers' proposed solutions regarding infrastructure, communication, or terminal operating hours. The extent to which the investigation process was intended to be a forthright discussion of potential solutions is not clear from the written materials that the Agency produced, and, to the extent that it was trying to elicit specific practical advice, it is not clear that the CTA had the speciality technical resources to give it a detailed assessment.

3.2.3 Motivational debates

Motivational framings concern the question of why (1) a powerbroker (in this case, the Canadian Transportation Agency), should act, and (2) why resources should be mobilized by any actor (including in this case the railways, the shippers, the terminals, and others) to solve a problem. There was plenty of disagreement about the former, but a surprising amount of agreement about the latter. As a result, discussion was fairly limited: Few parties disagreed on the point that the system could, in principle, be improved.

The most prominent point in these discussions was the sheer importance of the railways in Canada generally, and of the port of Vancouver specifically. This point appeared frequently in the rhetorical preamble to the various parties' statements and documents. ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 1,24,74,192). This was, to some extent, just fluff, used to pad-out introductory statements, or ingratiate a speaker at the CTA's hearing to the Agency. In some cases, however, shippers raised the spectre of international competition to urge the railways to act ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 156), while the railways voiced fears of cascading failures across the whole supply chain if the Agency did not allow them to manage the system appropriately. The City of Vancouver noted a similar local impact affecting employment and the economy in the area, as well as on the railway network and in the shippers' industries more broadly (Litwin, 2019).

There was no agreement on what actually qualifies as good management, and for some shippers, particularly the Freight Management Association, the question of what constituted good regulatory governance boiled down to the CTA exercising its legal mandate to fix the problems on the railways. By imposing embargoes, they argued, the railways were simply not meeting their obligations under the *Canada Transportation Act*: "a shipper who is told that his or her permit is denied can ship no traffic, period. The use of embargoes and permits to deny service and frustrate business growth is unlawful" ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, p. 138).

This led to a debate on the fraught question of reasonableness under the *Canada Transportation Act*: Is it reasonable for the railways to be expected to carry all traffic during periods of heightened congestion and demand, even when the existing infrastructure might not be able to do so? Can a railway decide that the expectations placed on its infrastructure are unreasonable due to insufficiencies in the infrastructure which they themselves are responsible for building, operating, and maintaining?

The CTA's conclusion on this subject was spelled out in its decision letter, released at the end of the investigation, when it argued that the fact of CN,

> "having signalled its intention to impose embargoes on pulp shipments in September, well in advance of these operational challenges, leads to the conclusion that CN was not prepared to take all reasonable measures to deal with issues that it anticipated in the Vancouver area and to provide pulp shippers with the reasonable service to which they are entitled under the CTA (Canadian Transportation Agency, 2019b)."

The resolution to this dilemma from the CTA's perspective, then, is that embargoes are not a violation of service obligations *so long as sufficient alternative measures are attempted first, and embargoes are used as a last resort*. This position remains somewhat vague, however, as there is not much detail about exactly what should be used as a first resort in cases where infrastructure creates clear limitations on traffic throughput, and when capacity cannot be increased in the short term. In this matter, the CTA's appeal to planning, expressed through its requirement for CN to submit contingency plans, is being made to cover a lot of ground. The Agency's ruling implies that the simple act of forecasting and making contingency plans will be able to overcome capacity limitations. This perspective was not endorsed by any party that participated in the investigation, nor in subsequent interviews with the author of this report. Even shipper organizations that were highly critical of the railways generally suggested that more capacity, rather than simply better use of existing capacity, would have to be part of the solution.

A final motivational argument was moralistic and political in nature. The shippers accused the railways essentially of being rapacious, self-serving, and greedy. They alleged that the railways routinely take advantage of a power imbalance to maximize their financial returns, in part by under-investing in infrastructure. This was repeated in many of the author's interviews with shippers for this report. It is hard to say how much credibility the CTA gave to this narrative; it is not normally the kind of thing one writes in a regulatory decision letter. But the Agency seems to have avoided levying aggressive or punitive measures aimed against the railways, and its decision said nothing about allegations of systemic and deliberate under-investment.

3.2.4 Procedural debates

This was the first use of the Agency's new own-motion investigation powers for rail transport, resulting in considerable confusion, concern, and debate about how exactly this power should be used in practice, and how different players in the investigation process should have been expected to contribute to it. While one shipper organization was pleased with the procedure adopted by the Agency and the way it played out, every other organization interviewed by the author about this process had complaints.

One participant in the investigation remarked during an interview with the author that the relevant legislation gives no guidance on how an own-motion investigation should be carried out. That participant also noted that the procedures happened very quickly, with no outreach prior to the formal launch of the investigation. When asked about the process used during the investigation virtually nobody, whether affiliated with railways or with shipper organisations, was particularly satisfied with the Agency's choice of test case, the procedure it applied, or the decision it reached. One shipper representative noted that, at the time of their interview with the author, congestion was as bad as it had been in 2018–2019, but in light of their experiences in 2019 nobody was asking for an own-motion investigation to remedy it. The various opposing parties' reasons for dissatisfaction have some important points of alignment.

A major issue on which there was a great deal of debate and confusion was the role of the Agency in the proceedings: Is its role akin to that of an impartial judge, a jury, a prosecutor, or merely an investigator that searches for facts and understanding? Being all four at once implies conflicts of interest. The Agency's response to this dilemma was that it was running an "Active but neutral" investigation, during which its officers would make a neutral decision based on the facts brought forward, but would also play a role in actively seeking out those facts. There was plenty of debate about this from the start, with the railways in particular lodging complaints, often centered on the fact that the Agency shifted from one focus of the investigation to another. But the issue came up on both sides, with some shippers interviewed for this project raising similar doubts about impartiality even if it were an "active investigation".

This issue also had noticeable effects further down the line, for example when the Agency reached out to terminals to ask about their unloading capacity. The question of what data one needs in order to understand something as complex as unloading capacity is not a neutral one: Different data will suggest different answers. But it was the CTA that ultimately chose which data to request, with multiple parties suggesting after the fact that the Agency had chosen incorrectly.

Another critical procedural issue was the question of evidence, and how this overlapped with questions of confidentiality and potential retaliation. As discussed above, the railways were constantly questioning the rigour of the evidence relating to problems that the shippers brought forward, asking for more detailed data, and objecting that the lack of data presented a basic fairness issue, as they (the railways) did not fully understand the case against them. CN asserted that:

> "railways have a fundamental right to know the case being levelled against them and that CN be provided a fair, proper and timely opportunity to test that case and respond before

> any decision is made by the Agency regarding CN's service obligation compliance. This means two things: First, there must be a particularized allegation of breach, including the shipper at issue, the specific movement or movements at issue, and full particulars as to why the shipper or the Agency claims CN has breached its service obligation. Secondly, and of equal importance, CN must also be provided with all of the evidence in support of the allegation and be provided a fair opportunity to test the allegation and lead its own evidence in response." ("2019 Vancouver Freight Rail Investigation Hearing - Day 2," 2019, pp. 249–250)

The response from many shipper organizations was that they could not bring forward data specific enough to illustrate the problems they were discussing, either because it did not exist, or because doing so would expose their members to the risk of retaliation. This is an issue that representatives of shipper organizations emphatically underlined in interviews with the author.

There are good arguments to be made on both sides of this issue. It was obvious in interviews by the author with shipper organization representatives that this problem also affected the conventional complaints process. Some shipper organizations appeared to see an own-motion investigation as a possible remedy for this issue.

This could explain why a large part of the CTA's eventual finding in this investigation was not systemic at all: Its finding against CN concerned a specific embargo and permit process in a specific time and place, affecting a specific industry. Presumably this outcome could also have been reached as the result of a normal service complaint. For many of the other complaints, the Agency agreed with CN that there was insufficient evidence of a breach, and it invited shippers to use the regular complaints process if they wanted to pursue the issue. Much of this stems from the fact that fact the burden of proof for a system-level service problem was never laid out during the investigation.

A complaint voiced by nearly everybody in the investigation concerned its pace, which was simultaneously too fast and too slow. The standard completion time for a level of service complaint process is ninety days. There are debates about whether this is sufficient even in those cases, but a very common sentiment expressed in interviews by the author was that the Agency simply could not make meaningful findings on such a wide range of possible service issues in that amount of time. This view also appeared in the investigation itself, particularly with railways objecting at the start of the oral hearings that they had been given only three days to amass very large amounts of data ("2019 Vancouver Freight Rail Investigation Hearing - Day 1," 2019, pp. 77–78).

Shippers were less likely to object to this, but the fact that many of them simply did not submit data at all (even data that they might have thought was safe from the risk of retaliation) suggests that the time constraints may have affected them as well. This issue kept coming up again and again as the Agency pursued new themes and avenues of investigation, all on a tight deadline. The time frame, however, also proved to be in many ways too long, since by the time the Agency's final decision was announced on 15 April, the acute crisis had already long passed.

Very few people involved with the investigation seem to have had a good idea of what the process was supposed to be. The own-motion was, by design, a combination of many different processes, including an information-gathering exercise, an adversarial legal dispute, a process for surgical regulatory intervention to deal with an emergency, and a study to determine if there were system-level problems (as distinct from problems for which one party alone might be held responsible). When asked what they would like the process to look like, many participants added yet other ideas. The representative of one organization interviewed by the author for this project said they would have liked it to have looked more like a police investigation. But the ways in which these often-contradictory aspects of the process intersected and interacted with each other were never made very clear. The result was that virtually every group of participants in the process went into it with a different set of expectations. Virtually none of them left satisfied.

4. Discussion

The analysis above highlighted a few common issues that appeared throughout the investigation process. These will be discussed in detail in this section.

4.1 Evidentiary issues

Trenchant debates about appropriate evidence appeared in many of the different areas discussed above, and throughout the timeline of the investigation process. The general pattern was simple: Shippers would point to a problem that they perceived to exist. Railways would reply by denying the existence of this problem, claiming that the shippers' evidence was anecdotal rather than systemic, and demanding better evidence to substantiate the shippers' claims. When evidence that was up to their standard was not forthcoming, the railways' representatives requested the investigation be concluded. Shipper organisations would reply by saying that the kind of evidence the railways requested would identify their members and put them at risk of retaliation. The Agency never put forward any kind of clear solution to this dilemma, and many of the debates became simple he-said/she-said arguments. The Agency did not establish strong enough evidentiary standards to avoid this.

There was also a question about appropriate *use* of data. This had a similar structure, although the Agency played a more direct role in it because it was often the one asking for the data. When one player in the discussion presented any kind of numerical evidence to back up its position, an obvious move for an opposing player would be to argue that the first player was using the wrong metric. The arguments over what kind of metric to use to measure, or even to forecast, congestion revealed considerable disagreement. A representative of a shipper organization noted that they had to do "statistical gymnastics" to adequately make their case to the Agency.

Despite the complex issues and types of evidence handled during the investigation, ultimately the CTA made findings whose primary evidentiary basis was simply the fact that embargoes had existed in the first place. While analysis was undoubtedly conducted on the data and other evidence submitted to the CTA, it does not appear to have resulted in very much that actually influenced the outcome of the procedure.

The core issue here is that the investigation proceeded without any clear evidentiary standards. Appropriate evidentiary standards should ideally include clear metrics for what kinds of data are useful for providing insight about the causes of congestion in a complex shipper/rail/terminal/marine network. They should also provide some way to deal with the perceived retaliation problem, or at least clarify the Agency's position on how to handle evidence in cases where a risk of retaliation is alleged. All of this is made much more challenging when the process is aimed not at assessing a single service complaint, but at investigating a broad list of system-level issues. Without even a clear consensus on what constitutes numerical evidence of congestion, the Agency appears to have drowned in competing metrics. This is further supported by the fact that on many topics discussed in the final decision, the Agency explicitly justified their lack of regulatory action on the grounds of limited evidence.

4.2 Focus, timeline, and resources of investigation

The scope of the own-motion process was enormous. While one might say with hindsight that the real issue at stake was embargoes, permits, and to a lesser extent the general phenomenon of seasonal congestion, participants in the process found themselves debating a list of interconnected issues that included several separate embargo and permit processes, terminal capacity, infrastructural investments and the constraints limiting it, the order of arrival of grain shipments, pipeline management in the forest products sector, and the effectiveness of conference calls between railways and shippers.

While some of these aspects clearly played a larger role in the investigation than others, it is hard to see how a railway or shipper involved in the process could have confidently chosen to focus its efforts on all those areas. This was in large part because the CTA claimed and exercised the right to shift the focus to areas that they saw as most relevant or concerning at different points in the investigation. The only real bounds were geographic: The investigation's remit of “possible rail service issues" left virtually anything happening in Vancouver's railway infrastructure potentially open for contention, and with no key performance indicators, there was no clear way for the Agency to direct its focus into the issues that most needed to be understood.

The Agency's justification for this was not unreasonable. It needed the ability to chase down leads to identify system-level problems wherever they might be uncovered. The railway system is so complex and interconnected that it is genuinely very difficult to separate issues of communication or predictability with broader questions of efficiency and good service. But in practice, the Agency’s approach created two problems that were critical in the process. First, it encouraged all participants to take a scattershot approach, using the investigation as a general forum to raise whatever issues they had failed to find another appropriate outlet for. Second, and following on from this, it meant that the limited time for the investigation imposed severe constraints on the ability of the Agency, or any other participants, to cover the necessary ground.

This seems to reflect a fundamental tension in the way the process was set up. On the one hand, it builds on a tradition of railway regulatory processes designed to quickly investigate and provide remedies for contemporary issues, on a fast enough timeline that the remedy can have an actual impact on the events that precipitated the investigation. On the other hand, the own-motion process appears to be intended to do deeper, nuanced investigations of complex issues, using a more holistic lens. The only way to make these two goals coexist effectively is the

provision of massive resources to enable the processing of lots of very complex information quickly. These resources were not in evidence.

4.3 Temporality and nature of unexpected issues

On the most basic level, the railways and the shippers agreed about the fundamental cause of the embargoes imposed by CN: There was excess traffic destined for the interchanges in Vancouver, and while there were disagreements about whether embargoes and permits were the best solution to the threat to fluidity that this posed, the fact that it *did*, in fact, pose a threat to fluidity was not particularly in contention. The Agency's ruling also implies that embargoes and permit systems *are* an acceptable measure for railways to respond to unexpected congestion, because it determined that the embargoes around the heavily-congested Thornton Yard were in fact permissible.

A fundamental disagreement, however, was the extent to which the congestion in winter 2018 should be seen as an ordinary or an extraordinary event. Or, alternately, whether it should be seen as a fundamental cause of short-term problems, or merely as a symptom of longer-term problems that demanded a systemic remedy. Both sides had good points to make on this subject. On the one hand, it is hard to fully agree with the Agency's determination that CN's awareness in September of potential freight issues materializing in December, as evidenced by CN's letter to shippers, means that these issues were "expected". Given the timescales over which events unfold on railways, and the real infrastructural limitations affecting the system, the fact that a congestion event is expected three months in advance does not necessarily mean that the problem is routine (i.e., not urgent) or that there is an obvious and easy short-term solution. On the other hand, the shippers' points about investment are a reasonable retort: Over the long term, railways should be able to make at least some investments necessary to mitigate against these kinds of issues. The question of what level of mitigation should be reasonably expected of the railways over the long-term is a complex legal and regulatory issue that does not appear to be clearly answered in the rules that currently exist.

It is not the purpose of this study to answer contentious, technical, managerial, or legal questions. But the fundamental impasse here deserves some more detailed attention if the question of embargoes and permits is to be resolved in any meaningful way. For railways, embargoes and permits are seen as a traffic light on a busy road: Annoying and sometimes costly, but ultimately essential to avoid even worse delays. For shippers, embargoes are akin to a traffic light built to control congestion on a road that has been build much too small. The question that remains unresolved is whether regulation should focus on the short-term issue of the traffic light, the longer-term issue of the capacity of the road, or both, or neither.

4.4 Responsibility for infrastructure investment

Another unresolved question related to the previous one is that of infrastructural investment. Shippers accused railways of cutting their networks too close to the bone in pursuit of maximum financial returns—a practice which resulted in inevitable congestion, given the size of the upswing in traffic that occurred. If this is indeed the case, then it would presumably be an issue within the purview of the regulator. The CTA is, after all, intended to be a kind of substitute for market competition, there to ensure that railways do right by their customers who have no other

service provider to turn to. It is hard to see why provision of adequate infrastructure would not fall under this mandate.

But this is a complex question. There are, first of all, serious limitations on the railways' ability to expand their infrastructure, limitations that go beyond money. Space is at a particular premium in a place like Vancouver, where land values are in excess of $20 million per acre (O'Brien, 2020) and land-use restrictions can take years to overcome. The clearest answer to this coming out of the testimony and submissions during the regulatory process is the question of reasonableness: How much investment of money, and also of time, effort, political capital, and land to build new infrastructure qualifies as a reasonable effort and investment for the railways to meet their service obligations? The same question can potentially also be applied to rolling stock, workers, and other investments.

This question came up a lot from both sides of the debates, but there was little serious engagement in trying to answer the question beyond point-scoring, and the Agency did not pursue the matter seriously. The remedy imposed by the Agency, of mandated planning exercises for CN, is obviously insufficient on this question: The Agency now requires CN to prevent anticipated congestion three months out, yet the timeline for expanding railway capacity is measured in years or decades.

4.5 Systemic events versus service complaints

The idea underlying own-motion investigations appears to be a good one. A transportation and logistics infrastructure network like the Port of Vancouver is a complex system, and like any other complex system, problems within it will not always be reducible to a single identifiable cause. The importance of this was noted by one representative of a shipper organization, who complained in an interview with the author that the response of railways to level-of-service complaints is to simply shift rolling stock from one shipper to another. But while the investigation certainly had a wide scope, this is not the same thing as a genuinely systemic orientation.

Many of the issues that the investigation ultimately focused on did not appear to be particularly systemic. The Agency itself acknowledged this in its final report, when it noted that many of the issues raised by shippers did not have sufficient evidence, but could potentially be pursued as individual level-of-service complaints (Canadian Transportation Agency, 2019b). An overlapping point was made by a shipper organization in an interview with the author: Their view was that a better own-motion investigation might have focused on something genuinely systemic, such as container shortages or disruptions, rather than something narrow as one railway's embargo on one commodity. Even the things the Agency did act on, most notably the permit process for forest products, concerned individual complaints by individual shippers, rather than system-level issues.

Some of the blame here might lie with the shippers, who raised many issues that might have been inappropriate for the purpose of an own-motion investigation. But their motivations for doing this are understandable: As discussed above, they have concerns about the possibility of retaliation against conventional level-of-service complaints. If we take this concern seriously, it is hard to blame shipper organizations for seeing the own-motion mechanism as a way of seeking a remedy at lower risk to their members. While this might be a legitimate problem, however, it is not the specific problem that the own-motion investigation is ostensibly designed to solve.

The root of the issue here is that there does not appear to have been a clear definition from the Agency's point of view, of what exactly constitutes a system-level issue as opposed to an individual complaint. More clarity on this would help future investigations to be more focused, and hopefully satisfactory for all (or at least more) of the parties involved with them.

5. Conclusion

The debates in the Vancouver freight rail investigation, despite their diversity, mostly had to do with the costs of failure. Not total failure—even at their most congested, the railway infrastructure in Vancouver was still actively carrying commodities to terminals. There were, however, moments during which the system did not function as completely as all of its users would have wished. More than a few cars did not get where they were going at the time that shippers wanted them to get there, and that imposed costs on the organizations sending those carloads. Under the status quo, these costs are simply borne by shippers, but are meant to be minimized through the actions of the CTA.

There is a balance that this system of governance must strike. It would be possible, in theory, for the railways to invest in so much infrastructure and other assets that congestion virtually never happens, and that measures such as embargoes and permitting processes are never necessary. This would almost certainly be financially non-viable because a large percentage of the enlarged infrastructure, built to provide surge capacity, would go unused most of the time. It would also be possible for the regulator to impose no obligations at all in this regard, and to give railways total discretion to invest in and operate their networks without being concerned about service obligations, and to either make shippers absorb the costs of congestion, or, somehow, through the design and implementation of policy, to impose these costs onto the railways without allowing them to be compensated. These are both extreme scenarios. Any reasonable way of providing regulatory governance over a railway network will fall somewhere in between. The question of where exactly it should fall is at its heart a philosophical and political one.

The managerial and technical realities of running a railway are constrained by finances, finite amounts of space, and the basic laws of physics and mathematics. The question of how these constraints should overlap with the railways' legal obligations was at the core of most of the debates that took place during the investigation. The railways claimed that embargo and permitting processes are often the least-bad option in cases where the existing infrastructure simply cannot handle the demands placed on it. At least some shippers argued that railways' obligations are absolute, and that it is their responsibility to invest in however much infrastructure it takes to avoid the need for embargoes and permits, regardless of external conditions and shippers' own practices.

A useful outcome from this investigation from the Agency would have been some kind of guidance or direction on this question, delineating to the extent possible the parties' responsibilities in a way that takes account of challenging conditions such as weather and increased demand. The Agency could have fulfilled its remit by providing insight and clarity on this question. It could have validated the railways and explicitly justified embargoes as a legitimate traffic control measure; or it could have validated the shippers' position and said explicitly that embargoes are

not an acceptable way for the railways to manage congestion. Either of those would have brought important issues to light where they could attract further informed analyses that contribute to improving this thorny regulatory-governance problem.

Instead, the Agency's decision *implicitly* endorsed some embargoes imposed to deal with congestion (such as the ones applied by CP), while at the same time saying that CN's embargo was not appropriate, based on the incidental detail of CN having communicated the embargo three months in advance. The Agency's reasoning suggests and even encourages an obvious and counterproductive loophole: CN or any other railway could simply refrain from communicating in advance about embargoes or other congestion-control measures to avoid being affected by a similar decision by the Agency in the future. This would leave shippers with very little time to make alternative arrangements.

More importantly, the decision leaves the core issue largely unaddressed. The remedy imposed by the Agency on CN, of requiring the railway to submit plans, can address these issues in only the relatively short time frame of three months—which is far less than the time necessary to make major investments in the system, as many shippers wanted the Agency to force CN to do.

The outcome of the investigation also left the notion of unexpected events ill-defined; it left questions of sufficient evidence, retaliation, and the burden of proof unanswered; and it did not disentangle long-term infrastructural problems from short-term operational ones. It also entirely ignored issues with large parts of the system, such as restrictions and delays coming from the marine side of the supply chain that are prone to cascade through the entire system.

Given all of this, it is unsurprising that in interviews with the author, stakeholders on both sides of the debate were unsatisfied with the process and its outcome. Of course, this was the first use of the Agency's own-motion power in a railway context, and it would be surprising if there were no hiccups. But the evidence assessed here suggests that there were many shortcomings in the process and the Agency's ability to implement it. First of all, there was not a clear understanding of what an own-motion investigation is actually supposed to be for. This led to ambiguities in the process, which in turn allowed other unresolved issues in the regulatory system to creep in. Shippers, for example, attempted to use the own-motion process as a method of raising specific complaints in a way that minimized their risk of retaliation from the railways—an issue that contributed to many of the unresolved arguments about evidence and burden of proof that occurred throughout the process.

There was even a lack of a clear definition of what a system-level issue is, how it is to be investigated, what evidence is sufficient for diagnosing it, and what remedies are appropriate for addressing it. This meant that every participant in the process went in with a different set of expectations, to chaotic results. On this point, there seemed to be a basic conflict coming from the framing of the process as a comprehensive, in-depth analysis to get at the root of deep and systemic problems; and yet, simultaneously, a quick, reactive process to give remedy to shippers regarding urgent concerns. If it were even possible for any process to fulfill both of these roles simultaneously, it would almost certainly require far more resources, as well as different kinds and higher levels of technical capability than the Agency had at its disposal.

The title of this report, “Insufficient capacity?”, could be taken to refer not only to the rail-based transportation system, but to the Agency’s capability to plan and conduct an investigation of this kind.

Any set of prescriptive suggestions to address issues like those described above would require a deep investigation, considering the broader history of railway regulation in Vancouver and in Canada more generally, as well as much more large-scale data and system analysis. It was also very difficult for the author to get a balanced set of interviews with all stakeholders, in large part due to the constraints imposed by the Supreme Court appeal, which was pending while much of the research underpinning this report was undertaken. This made many parties understandably reluctant to comment. It is also not within the scope of this research to consider the political or legal constraints facing any potential remedy to the problems identified. To provide truly actionable suggestions, therefore, we recommend that future work in this area go considerably deeper.

The 2019 freight investigation was always going to be a learning process about a new regulatory power and how it works in practice, when administered by the Agency using its pre-existing capabilities and operating within the prevailing regulatory governance framework. The lessons it offered are still, we hope, being processed by the parties involved, and by the legal system, and, hopefully, if this report can contribute to it, by policymakers as well.

About the author

Cameron Roberts is an academic researcher, studying low-carbon transitions from a social science perspective. His PhD, from Manchester Business School, is in the field of Socio-Technical Transitions Theory, and since then he has studied the prospects for low-carbon transitions in various sectors, especially in transportation and industry. Recently he finished a post-doctoral fellowship at Carleton University’s School of Public Policy and Administration where he performed research on electric vehicles, autonomous vehicles, and other low-carbon mobility innovations. Currently he is a researcher at the University of Wisconsin, Madison, where he studies carbon dioxide removal and social radiation management.

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