FULL STEAM AHEAD:
PERFORMANCE MEASURES OF CANADA'S RAIL INDUSTRY

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INTRODUCTION

Transportation has played an important role in the political and economic development of Canada. The completion of the Canadian Pacific Railway to the Pacific Ocean is perhaps the best known example of this nation building role. Today, the railway industry continues to play an essential economic role by shipping many types of goods across the country. It was the legislative reforms of 1987 however, that defined a more market-driven approach for the industry, helping to transform Canada's mainline railways from domestic incumbents into leading continental competitors.

This paper traces this transformation of Canada's railway industry by examining selected operating and financial performance measures over a twenty five year period following the 1987 legislative changes. It begins by providing a context, identifying the rationale for regulatory reforms that emerged in the early 1980s in anticipation of enhanced trade and from pressures south of the border. In the second section, the paper examines the Canadian railway industry's performance from 1988 to 2013 and the contribution of the short line or regional rail industry

THE HISTORIC AND POLICY CONTEXT

Historically, transportation was viewed as a policy instrument for Canadian national economic development. Even before the last spike was driven into the Canadian Pacific Railway in 1873, federal regulation of transportation had already begun with the Railway Committee of the Privy Council, established in 1868 following a period of private railroad over-building. Rail was regulated with the use of both price and level of service provisions, exemplified by the Crow's Nest Pass Agreement for grain delivery in the west and the Maritime Freight Rates Act in the east (Muller, Toner & Cartwright, 2015).

As Muller and colleagues note, technological and economic factors conspired to alter the favoured position enjoyed by Canada's railways in the post-war period. These factors included the emergence of a highway system spawning a competitive trucking industry, the construction of the St. Lawrence Seaway that provided an alternative for grain movements and the replacement of coal with oil that moved by pipeline. On the passenger side, the highway system enabled competition for shorter passenger travel by car while a commercial airline industry did so for longer distance travel.

In recognition of this changing economic landscape, the MacPherson Royal Commission on Transportation served as the policy foundation for the 1967 National Transportation Act. Although the 1967 Act permitted limited competition among modes in Canada, transport markets remained subject to entry restrictions and rate setting. In the railway industry, carriers continued to incur financial losses from mandated services during the 1970s and into the 1980s. However, pressures for transportation reform were beginning to be felt in anticipation of enhanced trade and from south of the border.[1] In the United States (U.S.), the 1978 Airline Deregulation Act served to initiate regulatory reform, both across other modes and in other countries.

The 1980 Staggers Act deregulated the U.S. railway industry with a number of reforms including, for example, the elimination of collective industry-wide rate setting and the introduction of reciprocal switching provisions. Since Canadian and American carriers competed directly in many trans-border markets, the need for a more level playing field became apparent. In Canada, a federal policy paper - "Freedom to Move" - identified clearly the direction for reform to follow (Transport Canada, 1985). An overarching principle of this new direction was that competition and market forces would result in lower unit costs, more competitive prices, and a wider range of services to shippers.

For the movement of railway freight, specific legislative changes were contained in the 1987 National Transportation Act and in related amendments to the existing Railway Act.[2] In particular, confidential contracts were permitted between a railway and a shipper; common carrier obligations were retained in full; shippers with access to only one rail carrier were given access to competing carriers (inter-switching); stipulations regarding running rights and joint-track usage were clarified; existing provisions on minimum rate regulation and predatory pricing ended; and a proposal to adopt an approach to branch-line abandonment was developed.

The legislative reforms contained in the 1987 Act ushered in a period of restructuring within Canada's transportation industries, including rail (Brooks, 2008). For instance, thousands of kilometres of track were abandoned throughout the 1980s and early 1990s. One mainline rail carrier reduced much its network east of Montreal, with track being abandoned or sold and, in 1996, moved its head office to Calgary from Montreal. The other mainline carrier, a crown corporation, began reducing branch lines and, in 1992, started preparing for privatization. The company reorganized its operating structure and made significant workforce reductions while continuing to abandon or sell uneconomical branch lines.

PERFORMANCE MEASURES

To view the impact of these reforms on the railway industry, this section examines selective performance indicators. Railway carriers provide the Canadian government with comprehensive statistical data for policy as well as national accounting purposes. Using Statistics Canada data from the Annual Railway Report, time series have been created that portray the transformation of Canada's railway industry over the twenty five years following the 1987 regulatory reforms.[3] Five dimensions of the railway industry's operations are presented and combined in order to create performance indicators.

First, the key dimension of industry performance is financial. Following a period of restructuring in the early 1990s, revenues earned by Canadian railway companies steadily increased with a slight decline following the economic downturn of 2008 (Figure 1). Over the same period, operating expenses also increased but at a slower pace. As a result, the most widely cited financial performance indicator for railways – the operating ratio or the proportion of revenue used to operate the railways – had fallen to a low of 0.72 by 2013 (Table 1, M1). As private companies that maintain their own capital intensive networks, railways require sufficient earnings to re-invest in infrastructure.[4]

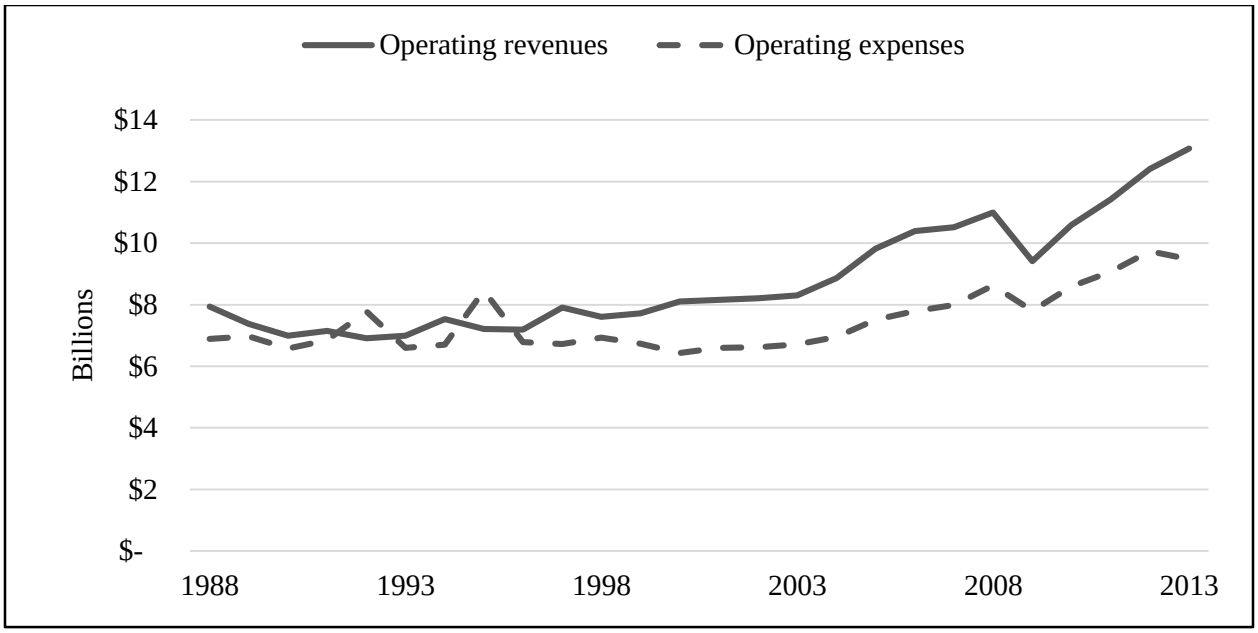

Figure 1: Total revenues and expenses (current $), Canadian railway companies
Source: Statistics Canada, CANSIM Tables 404-0004 & 404-0005

Table 1: Selected performance measures, Canadian railway companies

	1988	1993	1998	2003	2008	2013
M1	0.87	0.94	0.91	0.81	0.78	0.72
M2	$ 87,901	$82,834	$102,103	$115,507	$156,563	$209,656
M3	$103,636	$118,404	$167,848	$228,775	$319,403	$402,049
M4	2,066,024	2,208,119	2,482,223	2,927,297	3,289,798	3,305,903
M5	101,157	123,436	168,084	236,847	275,703	321,245
1. Operating ratio (total operating expenses divided by total operating revenues)						
2. Operating revenue (current $) per kilometre of track operated						
3. Operating revenue (current $) per employee						
4. Freight car-kilometres per locomotive in service						
5. Freight car-kilometres per employee						

Source: Statistics Canada, CANSIM various

Second, one reason that railway companies were able to curtail operating expenses was the legislative changes making it easier to abandon or sell uneconomical branch or secondary lines. In 2013, there were approximately 28,000 fewer kilometres of track operated by Canadian railway companies than was the case in 1988 (Figure 2). While regional railways took over the operation of some mainline track during this period, the kilometres (km) operated by the regional railways peaked at almost 20,000, about 27% of the total, in the early 2000s. The bottom line: Canada's railway industry was generating more than twice as much operating revenue per kilometre of track operated in 2013 compared to 1988 (Table 1, M2).

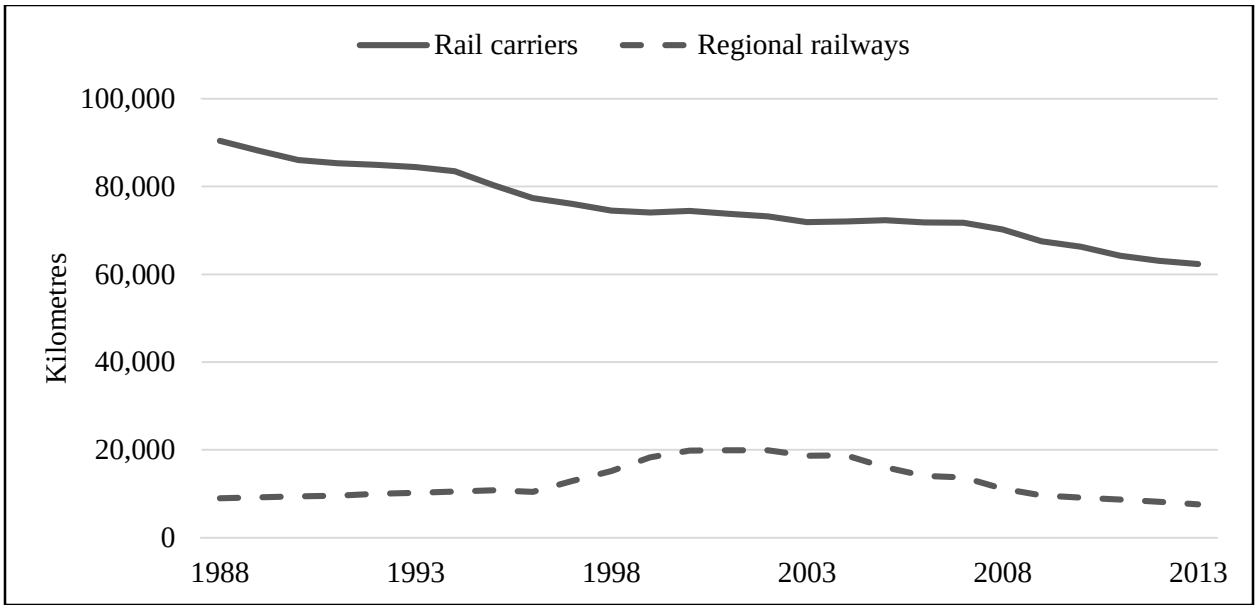

Figure 2: Total kilometres of track operated, Canadian railway companies
Source: Statistics Canada, CANSIM Table 404-0010

Third, another reason that railway companies were able to curtail operating expenses was the ability to supply the rail services in demand with fewer employees. By 2013, the Canadian railway industry was employing approximately 40,000 fewer employees than was the case in 1988 (Figure 3). A large number of positions were reduced, initially after policy reforms in the late 1980s and then again as carriers restructured during the mid-1990s. Both mainline carriers were reacting to competitive pressures with stringent shareholder oversight. As a result, employees in the railway industry were able to generate, on average, a much higher level of operating revenue (Table 1, M3).

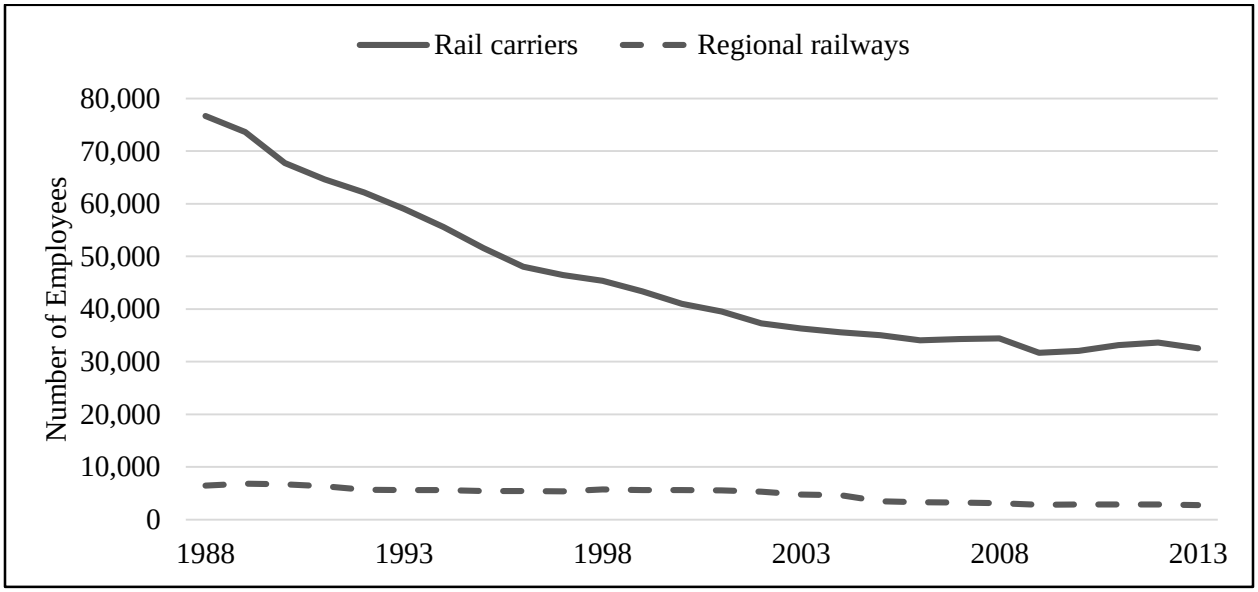

Figure 3: Average annual number of employees, Canadian railway companies
Source: Statistics Canada, CANSIM Table 404-0019

Fourth, Canadian railway companies required fewer employees partly because they were operating more efficiently with less equipment. For instance, by 2013 the industry was using almost 600 fewer locomotives than in 1988 (Figure 4). And fifth, despite reduced inputs (i.e. employees and locomotives) and operating over a smaller network (i.e. km of track), the industry was generating more output as measured by freight car-kilometres (km). By 2013, Canada's railways were producing more than 10 billion freight car-km, about one-third (35%) more than in 1988 (Figure 5). Over this period, freight car-km per locomotive and per employee were up 60% and 218% respectively (Table 1, M4 & M5).

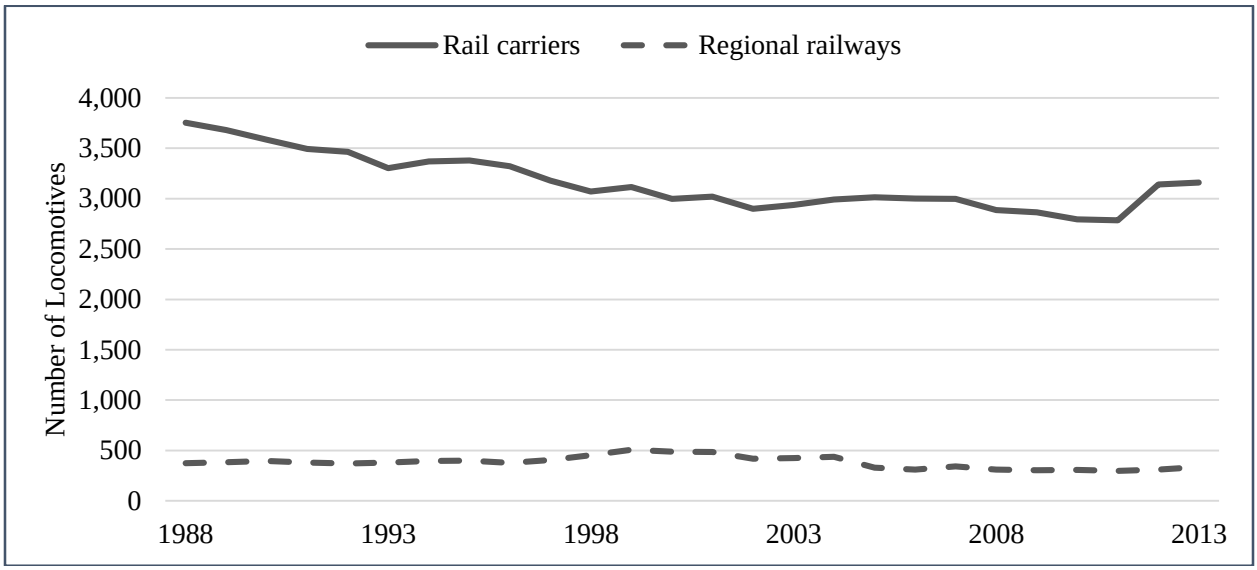

Figure 4: Locomotives in service, Canadian railway companies
Source: Statistics Canada, CANSIM Table 404-0017 & 404-0018

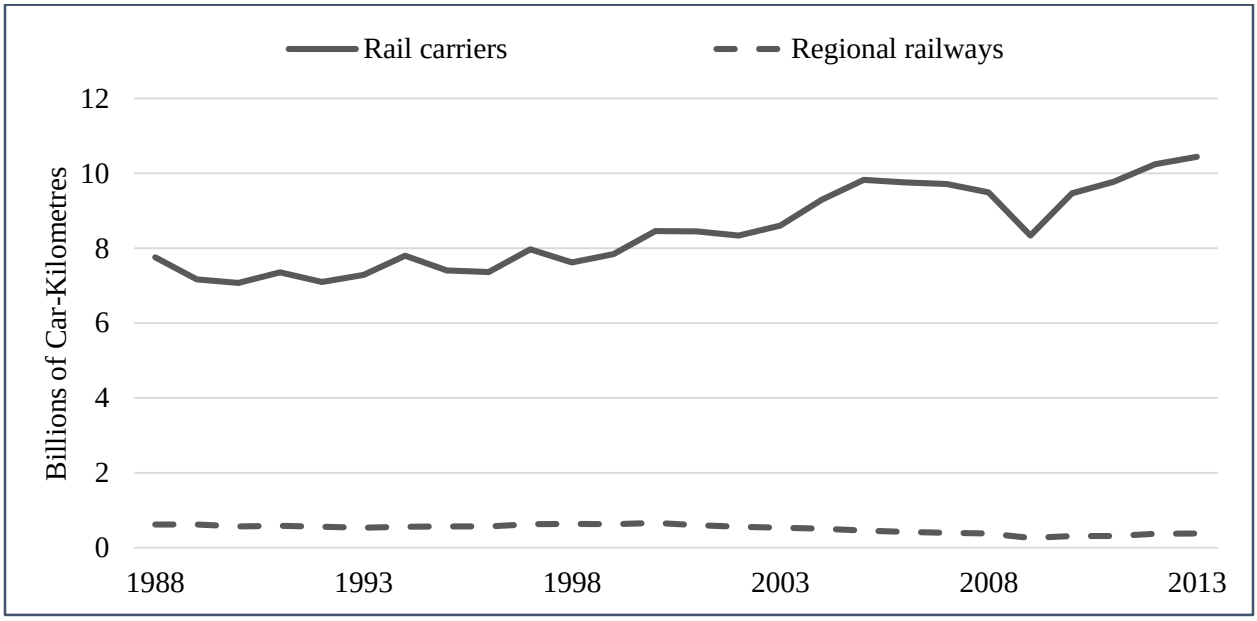

Figure 5: Freight car-kilometres of service, Canadian railway companies
Source: Statistics Canada, CANSIM Table 404-0014 & 404-0015

Transport Canada estimated that rail freight productivity growth was strong during the early 1990s and points to the rationalization of shorter-haul services as one factor in bolstering total factor productivity (Gregory, 2011). Regional railways are now a fundamental component of the national rail network, and the ability to divest uneconomic lines helped to foster this industry. Although Figures 2 through 5 depict a relatively modest contribution by regional railways, it is critical. In 2013 for example, these companies generated only 4% of total freight car-km but did so operating 12% of the track (km). Thus regional railways operate as feeder carriers to the mainline railways, effectively servicing the so-called first and last mile.[5]

SUMMARY

Supported by a vital regional rail industry, Canada's mainline railway companies now find themselves among the top seven Class I rail carriers operating in North America.[6] Looking back at the direction set by Transport Canada's (1985) framework for transportation reform, it was asserted that a greater reliance on competition and market forces would result in lower unit costs, more competitive prices, and a wider range of services to shippers. The performance measures examined in this study indicate that the 1987 and 1996 legislative reforms enabled Canadian rail carriers to make business decisions resulting in more efficient operations with lower unit costs.

This study did not examine the impact of these reforms on prices or on services to shippers. With respect to the former, Transport Canada reported that growth in freight rail output prices was nearly flat from 1986 to 2009, despite the 82% increase in input prices (Gregory, 2011). Since, Statistics Canada has developed a benchmark for rail freight pricing. The Freight Rail Services Price Index (FRSPI), with measures back to January 2013, is scheduled for release during 2016.[7] Finally, the extent to which Canada's railways offer a competitive array of services to shippers is a matter that has been examined by others (Pretto & Schulman, 2013 and 2015).

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ENDNOTES

[1] The ability to move goods efficiently was considered a key prerequisite for trade liberalization and, as such, transport reforms preceded efforts to reduce trade barriers (McKeown, Ouellet & Merilovich, 2014).

[2] The subsequent Canada Transportation Act of 1996 introduced additional changes with respect to track abandonment and transfers, helping to create a short-line or regional railway industry.

[3] While these time series are stable, some statistics may change as a result of fluctuations in currency rates, reclassifications of accounts, and other factors such as mergers, acquisitions as well as entry to and exit from the industry. The universe of regional and short-haul carriers changes regularly: There were 54 short-line carriers reporting in 2013, up from 37 in 2005.

[4] For example, in 2014 the Canadian Class I railways invested 20% of their revenues into their continental networks (Railway Association of Canada, 2015).

[5] This is tantamount to airline deregulation in which hub-and-spokes networks emerged with regional carriers distributing and gathering passengers to and from smaller airports (Peter & McKeown, 2012).

[6] U.S. Class I Railroads are line haul freight carriers with 2013 operating revenue of at least $467 million. CN and CP would qualify if U.S. owned; and both also own U.S. railways that, by themselves, qualify as Class I. American Association of Railroads (2014). Class I Railroad Statistics (https://www.aar.org/BackgroundPapers/Class%20I%20Railroad%20Statistics.pdf, accessed 28/12/15).

[7] The FRSPI is a monthly Laspeyres chain linked index at the Canada level based on approximately 35 services provided by Class I rail carriers (North American Industry Classification System 482113).