

RESPONDING TO THE MARKET POWER OF FEDERAL FREIGHT RAILWAYS*

The natural monopoly in which federal rail carriers in Canada operate for significant portions of the customer base of those carriers is not capable of providing market-based solutions. The *Canada Transportation Act*¹ (the “Act”) stands as the major bulwark against the market power of federal freight railways operating in Canada. However, the remedies under the Act are insufficiently strong to replace a competitive environment, leading to a transfer of wealth from shippers to carriers that is unjustified. Despite carrier complaints about regulatory oversight, the evidence is that shipper remedies are too weak in relation to carrier dominance, resulting in a need for the strengthening of those remedies, particularly in the absence of market forces to regulate price and output decisions of carriers.

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¹ S.C. 1996, c.10, as am.

Captivity of Shippers

That freight rail carriers in Canada operate in captive (or largely captive) markets is not a surprise to shippers. Of course, there are some rail markets in which competition can be relatively vigorous. For example, where intramodal and intermodal networks overlap, we can expect to see a higher degree of competition than where they do not. Consequently, these are usually, though not necessarily, found in densely populated areas. Of course, for bulk resource shippers, which tend to be found in geographically isolated areas, where population is by definition of low density, freight transportation markets tend toward an absence of competition. In those circumstances, subject to statutory shipper remedies, only a few of which either apply or work, a rail carrier can conduct itself free of the hallmarks of competition. For example, a rail carrier can charge rates and impose ancillary charges it sets unilaterally by publication of a tariff (without regulatory oversight), enter into confidential contracts with customers (including captive customers), provide the numbers of cars to any one or more customers as it sees fit, abandon trackage and other infrastructure, maintain or not maintain its assets, and, naturally, sue and be sued.

Duopolistic Rail Competition

In competitive markets, that is, where there is generally only duopolistic competition, rail carrier market power over shippers can be less overwhelming. Even in those circumstances, however, shippers worry about the possibility of collusion or conscious parallelism. If there actually is collusion, the *Competition Act* can address the matter through its apparatus, but, explicit collusion may be unnecessary because carriers are permitted, through the publication of tariffs and earnings reports, to signal price and volumes. Instead, tacit collusion may develop. And, since the natural monopoly of railways has been largely deregulated, that leaves very little protection for shippers (Tougas, 2000).

Alleged Restraints on Carriers

Often, carriers allege that there are restraints on railway pricing that take other forms. These include

- (a) “market competition” or “source competition” (coal shipped from Australia competes for the same steel mill customers as coal shipped from British Columbia; therefore, the distribution network, including rail, can only take that portion of the margin available to the shipper that will allow the shipper to stay in business),
- (b) “geographic competition” (a shipper changes destinations because it can access that destination on a second carrier’s routing at rates lower than offered by the first carrier),
- (c) “product competition” (shipping or receiving a substitute product or higher value end product, instead of the input product), or
- (d) “even-handedness among customers” (a carrier maintains pricing equilibrium among similarly-placed shippers, by type of product and origin of shipments).

Each of these alleged restraints uses language associated with market power and not that of competitive environments.² Each describes the competition faced by the downstream customers of the carriers (the shippers), not the competition faced by the carriers. Each is simply a justification for supra-competitive pricing and sub-competitive levels of service.

² Even the US Surface Transportation Board (1998-2002) determined to ignore evidence of product and geographic competition, preferring instead evidence of direct intermodal or intramodal competition, on the basis that doing so significantly impedes the efficient processing of market dominance determinations as part of the overall rate complaint process.

Differential Pricing

The relative ineffectiveness of these restraints also allows rail carriers to practice differential pricing, whereby the relationship of freight rates to rail costs differs greatly between different shipments, depending primarily upon the degree of shipper captivity. Some economists justify the conduct to overcome the effects of low-margin contributions in competitive markets by maximizing contributions from customers in captive markets. Bitzan (2000, p. 89) notes that

The presence of economies of scale in providing railroad services over a fixed network and the second best properties of Ramsey Pricing are the basic justifications for differential pricing in the railroad industry.

Let there be no mistake, however. The ability to price differentially in Canadian rail markets derives from lack of regulation and competition.

Ramsey Pricing

Ramsey pricing³ is a particular form of differential pricing advocated by rail carriers, which, based upon a number of assumptions, determines a set of prices for a multi-product seller that has significant constant costs where the seller is subject to maximum profit regulation. Whereas Ramsey pricing is second best, first best pricing is set equal to marginal cost.

There are many reasons why Ramsey pricing is completely inappropriate in the Canadian railway pricing context.

First, Ramsey pricing requires that the set of prices be determined so as to maximize the aggregate consumer surplus, subject to the

³ Named for the British economist Francis Ramsey (circa 1927), who proposed it as an optimal method of differential taxation. Ramsey pricing is sometimes referred to as “second best pricing”.

aggregate producer surplus (*i.e.*, contribution), being sufficient to cover constant costs. There is no regulatory restraint in Canada that ensures a rail carrier will not charge more than needed to earn a contribution to cover its constant costs.

Second, because the Ramsey price is determined as a function of its marginal cost and its demand elasticity for each product sold, many, many data points are required for the overall Ramsey price to have any meaning.

Third, because the Ramsey price for a product exceeds its marginal cost to the greatest extent if demand for the product is inelastic, and to the smallest extent if demand for the product is elastic, the price is ultimately axiomatic to the level of captivity. If the carrier faces no competition for its services, the Ramsey price is supra-competitive; if the shipper has alternative, effective, adequate and competitive means to transport its goods, the Ramsey price is more competitive. The more effective the competition, the Ramsey price, as in all competitive markets, is more closely coupled to marginal cost. Since there is no overall earnings constraint in Canada, Ramsey pricing as practiced by rail carriers is no more than the use of seller market power where it exists to set prices at the level that maximizes producer surplus (*i.e.*, to charge what the market will bear). It is equal in that circumstance to the monopoly price: $(p_i - MC_i)/p_i = 1/E_i$.

Fourth, carriers do not practice Ramsey pricing. If they did, carriers would limit their prices in captive situations to levels that would result in limiting their earnings to their cost of capital as determined by the Agency.

Fifth, there is no basis in competition policy for its practice in the absence of a regulator watching over price. As the Competition Bureau (2000) has stated:

Ramsey pricing was developed to provide regulators with the ability to allow natural monopolies to price so as to remain profitable while attempting to minimize the

inefficiencies or deadweight loss resulting from pricing above marginal cost.

The Bureau added that, in the railway context,

Ramsey pricing would extract higher rates from those shippers who were more dependent (i.e. price inelastic) on rail transportation.

Sixth, the logical counter to Ramsey pricing is that it requires regulatory oversight (Church and Ware, 1999). The Competition Bureau affirmed the point (2000) as it warned against its use in the absence of regulatory oversight to “prevent railroads from extracting high monopoly transportation rates from captive shippers.”

There are, in addition, numerous other economic and practical criticisms of Ramsey pricing.⁴ In the end, since there is no restraint on overall earnings, Ramsey pricing is simply “what the market will bear” pricing. Each rail movement is priced independently to yield maximum contribution to the rail carrier.

Legislative Response to Carrier Market Power

With a legislative preference for deregulation, railway market power has been countered with *ad hoc* shipper remedies to reduce rates or increase service. As any captive shipper knows (as well as a good many shippers with alternatives that provide inadequate or ineffective competition) the few remedies that exist operate in limited circumstances and for limited periods of time. These are regulated interswitching (for shippers located within a 30-kilometre radius of interchanges with connecting carriers), competitive line rates (a remedy so useless that it 14 years ago, the National Transportation Act Review Commission first declared it so – yet it remains in the

⁴ See works and commentary by Bonbright, Danielson and Kamerschen, Schmalensee, Huettnner, Roberts, Zajac, Kamerschen and Keenan, Damus, Edsforth, among others.

Act), running rights (which is for all practical purposes a dead issue in light of the language of the Agency in the *Ferroequus* decision, and, according to Bitzan, perhaps does not have the economic benefits shippers might like⁵). With respect to conditions of service, there is provision in the Act for shippers to file complaints to the Agency for a level of services determination, where some of the issues relating to pricing power also surface.

That's it. No other remedies. Some count final offer arbitration ("FOA") as a surrogate for competition, rather than a dispute resolution mechanism. Fair enough. However it is classified, it works, with limitations.

Final Offer Arbitration

If dissatisfied with its rates or conditions of service, a shipper may submit the matter to FOA. The process is rapid, effective, final and binding, private and confidential, and requires the selection of either the final offer of the railway carrier or the shipper. There is no Solomon-like compromise by the appointed arbitrator. The award lasts for no longer than one year. It typically motivates the parties to negotiate. The criteria by which an offer is selected is set out in the statute.

Ramsey Pricing and FOA

The logic of setting rail rates by reference to the dubious Ramsey price makes a mockery of the FOA process. That is because, if the

⁵ Bitzan (2000) argues that "*social welfare would not be improved by multiple-firm competition over single rail networks unless large price decreases occurred. Costs would increase in cases of total open access, or in cases of introducing competition to bottleneck segments.*" He concludes with a recommendation to address rate and service problems through policies that "*strengthen regulatory oversight rather than through policies of introducing or maintaining competition*".

rate selected is the same as the rate the carrier would have imposed by invoking the Ramsey price, there is no point to a shipper submitting its rates to FOA in the first place.

Restraining Differential Pricing

The need for constraints on differential pricing resonates in a variety of settings:

- (a) Parliament introduced changes designed to strengthen competition (confidential contracts, elimination of collusive pricing, extension of interswitching, competitive line rates and final offer arbitration, each of which had the impact of either reducing railway market power through strengthening of competition or, where that was not feasible, constraining the price impact of that market power); if Parliament had been prepared to accept unimpaired differential pricing, it would not have introduced these changes – they amount to a rejection of unimpaired differential pricing;
- (b) upon deregulation, the courts also recognized that competition should alter the manner in which price and output was to be determined in individual transactions;
- (c) the Canada Transportation Act Review Panel (2001) recognized the need for constraints when it said: “The Panel rejects assertions that differential pricing should be unfettered”, as the rail carriers had sought; and
- (d) the Competition Bureau (2000) took exception to the need for Ramsey pricing, too, when it stated:

It is important to keep in mind, when discussing Ramsey pricing, that this model was designed to assist regulators in determining rates for natural monopolies. It does not justify allowing monopoly railways to use their discretion in establishing differential prices for their customers.

Carrier Revenue Adequacy

One of the most common rail carrier defences to restraints on its ability to price supra-competitively, as well as to justify sub-competitive service levels, is revenue adequacy. Simply stated, this is the notion that a carrier requires an amount of revenue sufficient to earn its cost of capital. Of course, railways perpetually claim revenue inadequacy⁶, despite the existence of those carriers for 100 years or more. In any event, revenue adequacy is irrelevant for any number of reasons.

First, the justification for high contribution levels from captive rail traffic, is an historical and, on any sensible analysis, no longer applicable reason.

Second, revenue adequacy arises when a carrier has adequate access to funds, notwithstanding other considerations. This point is usually ignored by carrier advocates and policymakers alike.

Third, while revenue adequacy is a defined part of US rail transportation law, it is noticeably absent from Canadian law.

Fourth, even in the United States, where the regulator has a mandate to ensure railway revenue adequacy, rail carriers have adequate access to necessary funds to ensure their viability and to invest in needed capacity expansions, as evidenced by financial market performance and reviews.

Fifth, even if a revenue adequacy determination was needed in Canada, federal freight railways in Canada earn the required levels. For CN, the 14.2 % after-tax return on equity in 2004 was more than double the 7.02 % level determined by the Agency as being adequate. For the past five years, the average CN return was some 65 % above the Agency-determined values. For CP, the average return over this period was 35 % above the Agency-determined values. Further, a

⁶ As determined by reference to a carrier attaining its cost of capital.

review of CN and CP officers' statements respecting company financial performance leave no doubt that both carriers have adequate access to needed funds, are revenue adequate, and are realizing returns far beyond levels required for their long-term viability.

Revenue Adequacy and Ramsey Pricing

The US Surface Transportation Board (1985) explained that, once revenue adequacy has been achieved, Ramsey pricing has achieved its purpose.

Therefore, the logical first constraint on a carrier's pricing is that its rates not be designed to earn greater revenues than needed to achieve and maintain the "revenue adequacy" level.

There is even less of a justification for allowing federal carriers to engage in Ramsey pricing, given that the economic, legal and policy reasons for tolerating Ramsey pricing in the United States are not present in Canada.

Misallocation of Total Surplus – Harm to the Economy

A common shipper question is why high levels of earnings for carriers with a large number of captive customers should benefit from their natural monopolies. The question is valid. The allocation of excessive levels of surplus to carriers is not in the public interest. Even if one accepts the legitimacy of Ramsey pricing, such excessive earnings cause a reduction in total surplus, with a consequent reduction in economic efficiency. Again, if one accepts Ramsey pricing, for which there is no justification, the pendulum has swung too far the other way.

The Conversion of Consumer Surplus to Producer Surplus

In any event, competition should determine price and output, not railway financial viability. Railway carriers in Canada continue to

dominate, continue to exercise market power to increase rates and reduce output. The regulator's ability to oversee the introduction of a competitive mandate into national transportation policy has been emasculated. Both of these factors has given rise to a greater ability among rail carriers to keep the larger part of the surplus available in captive situations. As Edsforth (2005) points out, "except as constrained by final offer arbitration, and subject to their ability to calculate, railways obtain the maximum producer surplus available in every situation."

Why Should the Monopolist Get the Surplus?

Railway advocates frequently rationalize that when there are more captive shippers to share the pain of captive shipper rates (read, "high rates"), that is better for all captive shippers. The theory is that since a shipper is captive and market power allows a carrier to extract higher rates from that shipper (and therefore make a greater contribution to the carrier's constant costs), the more captive shippers there are to contribute to the carrier's constant costs, the less any single one of those captives will have to contribute. If rail carriers actually practiced Ramsey pricing and limited their earnings to recovery of their cost of capital, that might be true, even if discomfiting and uncompetitive. However, there is no rate constraint so there is no sharing of pain. And, any shipper will verify that it should not be making a contribution to a rail carrier's constant costs beyond what the competitive price would yield.

Monopoly Misallocates Resources

The ongoing undersupply of railcars is resulting in less than optimal output of rail services. It results in increasing costs to shippers to simply obtain service, to the point where far more expensive alternatives are being chosen to reduce shipper inventories. This reduction in output is precisely the reason why economists frown on monopolies – they can and do result in misallocations of valuable resources. Competition should drive rates and output, as a matter of law, policy and economics. We have, as a country, rejected

monopolistic pricing as the means of achieving articulated policy objectives.

Redistribution of Income

The result of supra-competitive rates on a particular shipper is that the market power of the carrier allows a redistribution of income from the shipper to the carrier. As carriers maximize contribution levels (by pricing supra-competitively, the majority of the available surplus ends up in the hands of the carrier). If it were not for the captivity, however, less of the surplus would end up in the carrier's hands, and total surplus would be increased.

Output

Perhaps even more frightful, both from a shipper and societal perspective, is that the rail carrier can limit the level of service and the supply of cars, achieving the level of output that maximizes the level of contribution to its constant costs, rather than making that contribution available to the shipper. The effect is limited deployment of resources in the economy as a whole. The shipper harvests threats over rates and service, downloading of carrier functions to the shipper, and contracts on terms favourable to the carrier. This is the type of conduct that occurs in monopolized markets – a market structure so defined by the Competition Bureau. What is surprising is the extent to which it happens given a legislative and jurisprudential preference for competitive market conditions.

Conclusion

Existing remedies to counter railway market power must be strengthened and expanded. Invoking any remedy is risky, but often necessary, something which policymakers, regulators and carriers should acknowledge and address without threatening the fragility of the exercise.

Those remedies that do not work must be replaced with those that do or be modified so that they can. Competitive line rate applications could be streamlined into a process that resolves some problem areas such as bottlenecks and certain long haul traffic, without enlarging the role of the Agency or interposing unnecessary impediments to railway contract freedom. Applications for extended interswitching limits could be made more user friendly without changing the substantive functions of the Agency, allowing the broader economy to benefit from the tremendous body of expertise lying within its confines. Running rights have been read down to a point of futility so that, even if one believes they only should be applied in limited circumstances, they cannot be reasonably advocated, much less obtained. This is an unwarranted impediment to competitive access for shippers, for which there is no basis in policy and should be reversed even if, as the carriers remind us, they will fight it to the end.

Until something better is shown to work, final offer arbitration should remain, be strengthened, allowed to expand to include all traffic, and made more accessible. The only remedy that has worked for captive shippers beyond interswitching limits is under regular attack by carriers in more than one forum and in more than one manner. While carrier response to legislated remedies is not surprising, shippers cannot do the job of policymakers to ensure the economy benefits from the efficiencies available in the rail transportation sector. Their job is to ship, and to do so at the lowest marginal cost in each and every circumstance. The policy maker stands between the dominance of the carrier and the reliance of the shipper, to benefit the whole economy, not just the fortunes of rail carriers.

In the meantime, if any other remedy is introduced into the overall legislative scheme, it will be necessary to do so in an environment that preserves what is known to work. As has been pointed out before in respect of final offer arbitration (Hume 2000, Tougas 2000), any new remedy needs enough time for shippers and carriers to react and adjust.

References

Baumol, W.J., 1977. "On the Proper Cost Tests for Natural Monopoly in a Multiproduct Industry," *American Economic Review*, 67(5)

Baumol, W.J. and Bradford, D., 1970 "Optimal Departures from Marginal Cost Pricing," *American Economic Review*, 60 (3)

Bitzan, J., 2000. "Railway Cost Conditions – Implications for Policy", Upper Great Plains Transportation Institute, Fargo, North Dakota

Canada. *National Transportation Act Review Commission*. 1993. "Competition in Transportation, Policy and Legislation In Review". Ottawa. Volume I

Canada. Canada Transportation Act Review Panel. 2001. "Vision and Balance". Ottawa

Canadian Transportation Agency. Decision Number 505-R-2002 [online]. Available from http://www.cta-otc.gc.ca/rulings-decisions/decisions/2002/R/505-R-2002_e.html

Church, D. and Ware R., 1999. Industrial Organization, A Strategic Approach. New York: McGraw Hill

Competition Bureau. "Submission to the Canada Transportation Act Review Panel Regarding Rail Access and Related Issues". October 6, 2000

Damus, S., 1982 "Ramsey Pricing and Its Applications", Economic Council of Canada, to the Transportation Research Forum

Damus, S., 1984. "Ramsey Pricing by US Railroads, Can it exist?", *Journal of Transport Economics and Policy*, 18(1), 51-61

Depoorter, B.W.F., 1999. "Regulation of Natural Monopoly", Ghent [online]. Available from <http://encyclo.findlaw.com/5400book.pdf>

Edsforth, J., 2000. "An Evaluation of Appropriate Compensation for Regulated Railway Running Rights." Canadian Pulp and Paper Association, Western Canadian Shippers' Coalition

Edsforth, J. 2005. Personal communications.

Hume, F.C. "Submission to the Canada Transportation Act Review Panel Re: competitive access issues" October 13, 2000 [online]. Toronto, Ontario. Available from <http://www.reviewcta-examenltc.gc.ca/Submissions-Soumissions/Nov15/Forrest%20C.%20Hume.pdf>

Tougas, F.E.J. "Report to the Canada Transportation Act Review Panel", October 13, 2000 [online]. Toronto, Ontario. Available from <http://www.reviewcta-examenltc.gc.ca/Submissions-Soumissions/Jan17/Francois%20Tougas.pdf>

United States. Surface Transportation Board. Coal Rate Guidelines, Nationwide, *Ex Parte* No. 347 (Sub-No. 1), Interstate Commerce Commission 1 I.C.C. 2d 520; 1985 Lexis 254

Williamson, O., 1968. "Economies as an Antitrust Defense: The Welfare Tradeoffs," *American Economic Review*, 58, 18-36