

The Formation and Dissolution of the Canadian Rail Cartel

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I. INTRODUCTION

The rail industry in Canada has been dominated for over 60 years by two railways. By the start of the 1980s, the Canadian National Railways (CN) and the Canadian Pacific Rail (CP) were producing over 90 percent of rail freight traffic and employing 87 percent of the rail labor force.¹ For

1. Figures for 1981 indicate that CN and CP accounted for the following percentages of all Canada's railways:

Operating Revenue	91
Freight Revenue	91
Operating Expenses	82
Rail Investments	90
Railway Employees	87
Track	90

Statistics Canada, Cat. Nos. 52-205, 52-208, 52-209, 52-212, 52-214. There are also some 20 Class II railways whose primary function is to act as short-haul, regional carriers of bulk resource commodities. Most operate within a defined region in one province, although some do cross provincial borders or the Canada-U.S. border.

40 years these railways colluded over rates. Over the last two decades they have operated within a legislative framework which, while regulating minimum and maximum rates, has, by permitting their collusion and practice of rate discrimination, and by enforcing the publication of rates and granting exception from the anti-combines legislation, facilitated and legalized effective cartel practices.

For the first 40 years the railway duopoly operated within a legal and policy framework that deemed transport, and rail in particular, as a means of furthering the national interest by neutralizing the cost of conducting business in the less advantaged regions of the country. The regulated rail cartel, with its competition in service and collusion in rate making, would appear to have been seen not only as a means of offsetting the potentially undesirable instability ensuing from unregulated competition between the two railways, but also as a means of furthering the national, economic interest by establishing rate parity among the regions and among different shippers. While legislation prohibited forms of personal rate discrimination, commodity rate discrimination still occurred. The emerging rate structure was one in which shippers were treated with degrees of equality with respect to their size and location, and offered rates on their commodities that reflected the capabilities of the commodities to bear transport charges and comparative transport demand elasticities. Such commodity rate discrimination did not go unrestricted. Statutory rates constrained rates on export grain, a substantial portion of their traffic, and on export traffic from the Maritimes. In the mid-50's a form of rate equalization was introduced.

The increasingly effective competition from road transport forced the end of equalized discrimination. The legislative changes introduced in 1967 removed the regulatory restrictions on non-statutory rates, empowering the railways to compete against trucks and water transport and to engage in commodity rate and locality discrimination. With the major exception of the statutory Crow Rates, which the railways were expected to cross-subsidize from profitable freight traffic, the railways were compensated for government-imposed obligations. In negotiations over compensation, the government faced a rail duopoly sufficiently unified and strong to have resisted any intention the government may have had to use information it could have derived from CN in negotiating compensating subsidies with the privately owned CP. Except for employment decisions, in which the government intervened and caused CN to retain more labor in economically deprived regions than desired, the government owned carrier was able to obtain parity of treatment from the government and the regulatory agency.

The unified positions, forcefully but discretely presented, were instrumental in the cartel forging institutional and regulatory structures that were

very much to its advantage. The railways were able to obtain subsidies to cover a larger share of their rail passenger rates. With the formation of the government owned passenger carrier, VIA Rail, the railways, who were already able to avoid competing with one another, effectively passed along (by means of operating and maintaining passenger trains on track they owned) the high wages and costs associated with the restrictive work rules that had emerged under the rail duopoly. In contrast, the railways' bargaining over imposed obligations in the freight sector were initially less successful. The retention of extensive branch line mileage favored the shipper. Rates for export grain fell below cost, causing the railways to increase cross-subsidization and disinvestment. The railways were to retain the advantage, however, with the passing of the *Western Grain Transportation Act*² in 1983. The Act phases out the Crow rates and the so-called "crow-benefit."

The cartel, however, engaged in practices that were not perceived by all in the transport sector to be advantageous. Some regions, such as the Prairies, contained shippers who perceived the emerging discriminatory rate structures to be sufficiently inimical to their region's development to support the dissolution of the cartel when it was threatened by the advent of the deregulated American railroad industry, following the passage of the *Staggers Rail Act*³ in 1980. Marking the end of the Canadian rail cartel and of the particular role of rail transport in the furtherance of the national interest, was the 1985 White Paper, *Freedom to Move*.⁴ The proposals to remove the exchange of cost information and the setting of common rates but permitting private contracts and rebates, expressed in Bill C-126,⁵ in effect remove the cartel's legislative protection.

The causal link between *Staggers* and *Freedom to Move* is the substantial U.S.-Canadian traffic carried on Canadian railways. In 1983 one-quarter of Canadian railway revenue was derived from transborder traffic.⁶ Until 1980 international rail movements between Canada and the United States moved under the same restrictive rules. Both regulatory systems discouraged price discrimination between different rail routes. Enjoying immunity from antitrust and anti-combines legislation, rates were set collectively. International joint rates could only be changed upon the unanimous consent of all carriers participating in the rate and with 30-

2. Can. Stat. 1981-82-83, ch. 168.

3. Pub. L. No. 96-448, 94 Stat. 1895 (1980).

4. Transport Canada, Cat. T22-69/1985E (July 1985).

5. *An Act Respecting National Transportation*, First Session, Thirty-third Parliament, 33-34-35 Elizabeth 2, 1984-85-86.

6. CTC, MINISTER OF SUPPLY AND SERVICES CANADA, INQUIRY INTO EFFECTS IN CANADA OF U.S. RAIL DEREGULATION, FINAL REPORT 1, Cat. TT32-6/3-1985 (June 1985).

days notice to the public. The result was an equalization of the rate levels over vast numbers of routes.

The statutory allowed scope for collective rate making, however, diminished under *Staggers*. The advent of intracarrier rail competition in the United States threatened collective rate making in the Canadian portion of the international rates, and also placed pressure on collective rate agreements on domestic routes. The threat came from the lower rates offered by the American railroads to shippers of international freight, and the ability, denied to Canadian carriers, to strike confidential contracts with the shipper. Attractive international rates invited requests from Canadian shippers for lower domestic rates. In the meantime, Canadian shippers took the opportunity to use American carriers and American rail routes. By 1984, CN and CP estimated that in the four years since the passage of *Staggers* they had lost revenue of the order of \$100 million.⁷

The competitive pressures emerging from the deregulated American railroad industry are reflected in *Freedom to Move* and Bill C-126. The legislation not only proposes to withdraw regulatory support to the cartel but would also institute rate regulation by establishing rates for captive shippers and stimulate intra-rail competition by imposing joint-track usage and shared running rights. The imposition of rate regulation in captive markets is indicative of the limited rate and service competition expected to emerge from just two track-owning, vertically integrated carriers who have divided markets and operated a tight cartel for over half a century. This paper argues that effective carriage competition will occur only after a substantial restructuring of at least one of the carriers. Such proposals are outlined in Section VII, which is preceded in Section II by a brief account of the forces shaping the events determining the rail cartel. Section III examines the cartel's role in shaping the institutions and regulations that emerged from the bargaining of the railways and the government over imposed public obligations. The next section, IV, explores aspects of the performance of the cartel over the period from 1967 until the impact of the deregulated American railroad industry was felt in 1981. Section V examines the impact of *Staggers* on the Canadian rail industry and of the reaction of the regulatory agency, the Canadian Transport Commission. The proposed legislative changes contained in *Freedom to Move* and Bill C-126 are compared and examined in Section VI.

II. RAIL CARTELIZATION

The purpose of a cartel is to maximize the total profits of its members. The cartel price would be higher and the supply lower than would

7. CTC, MINISTER OF SUPPLY AND SERVICES CANADA, INQUIRY INTO EFFECTS IN CANADA OF U.S. RAIL DEREGULATION, FINAL REPORT 17, Cat. TT32-6/1-1984 (June 1984).

be the case without collusion, resulting in welfare⁸ and resource losses as excess capacity is created. The successful cartel would be identified by its increase in total profits, rise in rates and allocation of market shares in accord with agreed market portions. Such success would depend on the acceptance of each railway to charge the agreed cartel prices, which in turn would depend on the enforcement of the collusive contracts. Enforcement would be tested if it were possible for an individual railway to make more profits by being disloyal than by being loyal. Such disloyalty would depend on the level of the cartel prices, the length of time it would take to detect cheating and the elasticity of demand over the range of prices within which the cheating takes place.⁹ If the cartel price is high, the detection period long and the demand price elastic, the binding force of private contracts may be insufficient to maintain the cartel, instead requiring enforcement by government regulation.

In Canada, regulation of the railways has both constrained and enhanced the formation and operation of the cartel. Early regulation of the industry appeared in large part to be motivated by shippers responding to imperfectly competitive markets for railway services, rather than as conscious, planned devices that perfected the enforcement of collusive agreements. There were regulations that by enhancing rate transparency, reduced the chances of undetected cheating; such regulations stipulated that rates were to be filed and published. Departures from the filed rates were forbidden, as were rebates and confidential contracts. Regulation imposing interswitching limits attenuated shipper choices and aided the railways in allocating markets. In contrast, there were regulations that constrained the cartel and in effect introduced a form of "equalized discrimination."¹⁰ Statutory rates constrained the railway's pricing on a substantial proportion of their traffic. Rate equalization was to be substituted for rate "discrimination." Pooling of output and revenue by the railways was prohibited.

As Table I indicates, the support to and constraints on the enforcement of the railway cartel were to change over seven decades of this

8. The gain to the cartel is a loss to the purchasers of the cartel members' output. Unless there are compensating price decreases elsewhere in the economy, the difference between the cartel rate and the competitive rate indicates a measure of the shippers' loss in real income.

9. For an analysis of the prerequisites of a successful cartel, see P. MACAVOY, *THE ECONOMIC EFFECT OF REGULATION, THE TRUNK-LINE RAILROAD CARTELS AND INTERSTATE COMMERCE COMMISSION BEFORE 1900*, at 13-24 (1965).

10. "Equalized discrimination" can be defined as that which equalizes the advantages and disadvantages of different purchasers of transport services. Boyer has described and distinguished it from cross-subsidation, as follows: "Equalizing discrimination emphasizes the ICC is interested in equalizing the conditions of advantaged and disadvantaged shippers rather than having one party pay the bills of another." Boyer, *Equalizing Discrimination and Cartel Pricing in Transport Regulation*, 89 J. POL. ECON. 270, 275 (1981).

century. For 30 years, the railway industry was effectively a duopoly subject to equalized "discrimination." From 1967 until the advent of changes introduced by the *Staggers Rail Act* in the United States in 1980, the rail industry could be described as a duopoly empowered with substantial collusive powers able to engage in extensive rate discrimination. The next two sections describe the formation of the duopoly and the regulation of cartel enforcement.

A. THE EMERGENCE OF A RAIL DUOPOLY

The earliest railways in England had resembled public tollroads, in which any party wishing to operate over a rail line could do so upon payment of a toll. By 1840 the advent of the steam locomotive and the iron rail had encouraged longer trains and a larger scale of operation. The result was the emergence of railway companies as exclusive providers of carriage over their own track.¹¹ The legislation in Canada that had incorporated railway companies with such monopoly over carriage granted them freedom to determine rate levels and quality of service. Shippers relied on competition between railways to protect their interests. The competitive process, however, was irregular, with periods of stability interspersed with alternating rate wars and short-lived cartels.¹² Statutorily imposed rates were the first major regulatory intervention. Their aim was to enhance the exploitation of primary products. Later regulatory intervention was principally designed to bring about greater equality of treatment of shippers and communities. This regulation indirectly strengthened, and in part limited, railway cartelization. It was three decades until the cartel's enforcement of collective agreements was significantly strengthened by regulatory legislation.

The construction of a transcontinental railway was considered vital to the building of the federation. The government contracted with a private syndicate, Canadian Pacific Railways, to build a transcontinental railway linking the Maritimes with the newly formed province of British Columbia. The financial guarantee was facilitated by a land grant scheme which acted as collateral for the railway's bonds. Protection for eastward moving traffic involved the granting of a monopoly to CP over southern routes, while protection for western movements was to be provided by the tariffs of the national policy.

11. D. OVERBEY, RAILROADS: THE FREE ENTERPRISE ALTERNATIVE 3-13 (1982).

12. In 1895 railroads operating between Chicago and the Atlantic seaboard formed the Joint Traffic Association. The Association imposed heavy penalties for infractions of the published tariffs. CP Rail joined the cartel in 1896, although the Association became defunct three years later after a ruling from the Supreme Court. As for rate wars, there was a much publicized one between the Grand Trunk and CP Rail for nine months in 1899. See A. CURRIE, THE GRAND TRUNK RAILWAY OF CANADA 386, 388 (1957).

Following completion in 1885, CP lost its monopoly on southern routes just three years later. By 1903 the potential growth in the west was sufficient for the federal government to assist in the building of two new transcontinental railways.

The discriminatory exercise of the railways' monopolistic powers served to sharpen the corollaries of common carrier obligation of fair and reasonable treatment. The notion of reasonableness brought forth consideration of equal treatment. Shippers as well as regional and provincial organizations and governments called for equality of opportunity, which often translated into requests for preferential rates. Special statutory rates and rate regulation were the resulting means used to enhance regional equality of opportunity. (see Table II).

The federal government in the 1897 *Crows Nest Pass Agreement* and in the 1901 *Manitoba Agreement* exchanged rail subsidies in return for concessionary rates. These rates were in turn voluntarily extended by all rail carriers to their export grain traffic. Facing increasing pressure to deal with allegations of unjust discrimination, the government revised the *Railway Act* and established a rail regulatory body—the Board of Railway Commissioners. The provisions of the 1903 *Railway Act* reflected shippers' responses to perceived imperfections of the rail market. The ban on pooling and the attempt to impose rate equality in effect prevented the perfection of a railway cartel, although the process requirements of rate filling and the forbidding of rebates buttressed rail rate stabilization.

In regulating originating and terminal switching services in 1908, the Rail Commissioners attempted to deal with the monopoly power of terminal railways. The outcome was a demarcation of carriers' markets for the rate and distance limit that were established while protecting shippers within the limit. It also served to exclude alternative carriers for shippers beyond the limit by allowing the terminal railways to charge much higher interswitching rates to shippers beyond the limit.

With a railway system such that one railway served a shipper in one part of the country and another served the receiver in another, shippers depended on co-operation between carriers to establish interline arrangements. Of particular importance at a time when there were few trucks were the agreements and rates established between carriers at the interswitching points of the railway lines. While the shipper wished to have alternative routings, the carriers, desirous of achieving maximum return on their investment, were disinclined to lose some of their captive shippers to another carrier by charging low interswitching rates.

Following complaints concerning the interswitching paraties and rates charged by railways, the Railway Commissioners issued in 1908 Order Number 4988 (later known as Central Order No. 11), which established the prevailing rate and area limits and sought adoptions in those

areas where previous orders did not exist. The rate was one cent per hundred pounds and an interswitching limit of four miles from the point of interchange.¹³ In 1918, General Order 252 required a railway to move originating or terminating traffic at a prescribed rate for another carrier when the shipper or receiver was within four miles of an interchange point between the carriers. There has been no increase in the interswitching limit, and only one increase in rates: a 50 percent rise over the 1918 rates established in 1952.¹⁴

The Board's responsibilities for rate levels were severely tested with the advent of the First World War. In order to fulfill their contracts with the government, the two newly completed transcontinental railways, the National Transcontinental and Canadian Northern, required rate increases to cover the full costs of construction and to meet the rising wages demanded by the railway unions. The rate increases accommodating such costs, however, would have resulted in large profits for the CP, leaving the Board vulnerable to the charge of facilitating profiteering. Another option for differentiating rates to reflect the degree of construction subsidies was also politically unacceptable because it would have meant breaching the equity of the rail rate structure. The Board did not increase rates with the result that there was a plunge downwards in the railways' net revenue, thereby leading to the bankruptcy of the two newly built transcontinental railways.¹⁵

The Canadian Northern was acquired by the government in 1917 and was later amalgamated with the federally-owned Intercolonial and the Transcontinental. In 1919 the Canadian National Railway Company was incorporated; the Grand Trunk Pacific and the Grand Trunk joined in 1920. Unified operations began in 1923.

B. THE REGULATION OF CARTEL ENFORCEMENT

The new government-owned carrier entered into vigorous competition with CP Rail in passenger and freight markets, engaging in expensive branch line extensions. The abrupt onset of the Depression, however, brought financial losses and a Royal Commission of inquiry into railway competition.

13. Heaver, *The Regulation of Railway Access to Shippers Through Interswitching*, 23 *TRANSP. RESEARCH F.* 43-50 (1982).

14. The rates are 1 1/2 cents per 100 lbs. for services involving private or industrial sidings and 3 cents per 100 lbs. for services involving team tracks. These rates are the only significant change from the 1980 order in the current General Order T-12 of the CTC, pursuant to Section 263 of the Railway Act, issued in 1965.

15. For a discussion of this interpretation of the formation of CN, see J. Baldwin, *Regulation versus Public Enterprise: Instrument Choice in the Case of National Monopoly*, in *GOVERNMENT ENTERPRISE: ROLES AND RATIONALE* 138-51 (1984)(papers presented at a symposium sponsored by the Economic Council of Canada in Ottawa in Sept., 1984).

The 1931-1932 *Royal Commission on the Railways and Transportation in Canada* (the Duff Commission) after rejecting a merger of the two railways, instead offered a set of proposals aimed at enhancing cooperation rather than competition. The legislative response was the *Canadian National-Canadian Pacific Act*,¹⁶ whose central provision encouraged cooperative schemes between the two railways "for the purpose of effecting economies and providing for remunerative operation."¹⁷ Such measures, despite requiring Board approval, were not to be enforced by the Board nor was the Board to require proof that all possible economies had been achieved before granting general percentage changes in rates.

The railways responded in their passenger markets by jointly operating passenger trains within central Canada. More significantly, in freight markets the carriers acted in a collective manner, exchanging cost information and establishing common rates.¹⁸ The carriers established in 1938 a new rate, known as "agreed rates," designed to improve their joint competitive position with the ever threatening truckers.¹⁹ Upon approval by the Board, a rate would be established in exchange for the shipper agreeing to guarantee that most (if not all) of shipments would be purchased from the railway. Where the points were served by another carrier, agreement of the other rail carrier had to be obtained before the agreed charges could be implemented.

The Board, with the power under the *Railway Act* to "fix, determine and enforce just and reasonable rates"²⁰ was faced in 1948 with the railway's first application for a general percentage rate increase since 1920. Between 1948 and 1958 there were 12 such "horizontal" rate increase approvals.²¹ In practice, the railways were prompted to apply the rate increases selectively according to what the traffic would bear. The resulting rate increases reflected the unequally distributed intermodal competition. Rates charged for lower-valued, long-haul shipments rose relative to short-haul, higher-valued shipments. As rates in central Canada where competition from trucking was strong were not only increased to a mini-

16. Can. Stat. 1932-33, ch. 33.

17. *Id.* at § 16(1).

18. The cooperative measures of the Canadian National—Canadian Pacific Act were inconsistent with the provisions of the Railway Act, Can. Stat. 1906, ch. 37, sec. 37, forbidding the pooling of revenue and freight. The provision of the CN-CP Act and the prohibition on pooling were in force, contemporaneously, from 1932-67.

19. The statutory provisions relative to agreed changes are found in part IV of the Transport Act. The legislation was proclaimed to come into force in November, 1938 and the sections pertaining to agreed changes were amended in 1955 following the recommendations of the Royal Commission on Agreed Changes, February 21, 1955. W. F. A. Turgeon, Comm'r, Ottawa (Queen's Printer and Controller of Stationary, 1955).

20. Railway Act, Can. Stat. 1906, ch. 37, § 325(5).

21. 1 ROYAL COMMISSION ON TRANSPORTATION 15, Cat. No. 21-1960/3-1 (1961).

mum, increasingly lower competitive and agreed changes were applied. In contrast, there were greater increases in rates, particularly long-haul, for the Atlantic and Western shippers.

The pressure from the provinces to constrain the emerging rate discrimination was reflected in the statute consolidations to the *Railway Act* in 1952, aimed at equalizing rates. Section 336(1), concerning a "national freight rate policy," proposed that rates on any class or kind of freight should be equalized across Canada, while Section 337, the so-called "one and one-third rule," established that the tolls applicable to freight traffic having its origin or destination in the Prairie provinces were not to exceed the transcontinental freight rate by more than one-third. In 1959 the government assumed jurisdiction over rate authorization by enacting the *Freight Rate Reduction Act*,²² which denied a rate increase and instead rolled back the rates. A freeze was imposed in the following year and was to remain in force until 1967.

Amendments to the *Railway Act* introduced in 1967 removed the concepts of equality of tolls and equalization introduced in the 1950's, eliminated the power of the Board to "disallow, suspend or prescribe tolls," and established a rate floor and ceiling within which the railways could establish rates. Rate transparency was retained. Rates had to be published, while Sections 380 and 381 of the *Railway Act* retained the prohibition on rebates and concessions.

The newly established regulatory authority, the Canadian Transport Commission (CTC) was to set maximum rates by means of a cost-related formula for "captive shippers." Under Section 278 of the *Railway Act* the maximum rate was set according to the long-run variable cost of the shipment plus a 150 percent contribution over variable costs for fixed costs. Under Sections 276 and 277 of the same statute rates were directed to be compensatory. Such a rate was defined as one that exceeds the variable cost of the movement of the traffic concerned.

Within these maximum and minimum rate levels, the 1967 *National Transportation Act*²³ (NTA) provided the rail carriers with greater rate flexibility in competing with other modes. Rate regulation no longer protected the shipper from the rail carriers. Rates no longer had to be "reasonable." The railways' freedom, however, was limited by Section 23 and 27 of the NTA. Section 23 provided for appeal of freight rates that might be prejudicial to the public interest. Hence, if rates were found to be "unfair," "too high" or "discretionary" the CTC could exercise its wide remedial powers. Section 27 pertained to the acquisition of an interest in a

22. Can. Stat. 1959, ch. 27, § 3.

23. CAN. REV. STAT. ch. 17 (1970).

transport enterprise by another transport enterprise. Such action could be deemed unduly restrictive or otherwise prejudicial to the public interest.

Most significantly, the *Railway Act* was amended to permit the railways to engage in collective behavior. Section 279 of the *Railway Act*, in permitting the railways to act in a "collective" manner, represented the residue of the legislative intent of rail cooperation contained in the *Canadian National-Canadian Pacific Act* of 1932-33, for it included a mandatory provision concerning the exchange of cost information and a permissive provision allowing the railways to agree upon and charge common rates:

Railway companies *shall* exchange such information with respect to costs as may be required under this Act and *may* agree upon and charge common rates under and in accordance with regulations or orders made by the Commission (emphasis added).²⁴

Now no longer required to seek formal approval from the Board (CTC) for most rate changes, uncertainty arose as to whether the rail carriers would not be regulated by the anti-combines branch of government. Under section 279 of the *NTA*, however, the railways were exempt, under the so-called regulated conduct exemption, as far as the exchange of information and the establishment of common rates were concerned from prosecution under section 32 of the *Combines Investigation Act*. Hence, this *Act* was explicitly recognized as not applicable to the rail industry when regulated by a government appointed Board.

III. IMPOSED PUBLIC OBLIGATIONS AND THE RAIL CARTEL

While buttressing the railway cartel, the government continued to influence resource and regional development by means of rail rates. Statutory rates were maintained and supplemented, for which the railways were either compensated directly by government subsidies or in the case of the statutory Crow Rates were expected to cross-subsidize from profitable freight traffic. Similarly, increasingly unprofitable passenger services, many of which the government wished to retain, were supported by profitable freight traffic. The *NTA*, however, espoused a change in the means of compensating the carriers for such imposed public obligations:

each mode of transport, so far as practicable, receives compensation for the resources, facilities and services that it is required to provide as an imposed public duty.²⁵

With the major exception of the statutory Crow Rate, the railways were to be directly compensated for government imposed obligations. The government was required to negotiate levels of service and compen-

24. *Id.* at ch. 69, § 53.

25. *Id.* at § 3(c).

sation with the railways. The government's negotiating agent was to be the newly created regulatory body, the Canadian Transport Commission, which was to determine actual losses and public need on a route specific basis. Amendments to the *Railway Act* established statutory provisions governing the discontinuance of passenger trains, branch line abandonments and the provisions of subsidies. Compensation for carrying export grain, known as the "At and East" rates, were made permanent by Section 272 of the *Railway Act* as amended by the *NTA* in 1967.

Sections 260 and 261 of the *Railway Act* primarily governed the procedures for passenger service abandonments, while Sections 252 and 253 established the process for branch line abandonments. The procedures were similar. A railway was first required to post notice of its intention to apply for abandonment. Once filed, the case became the subject of a public hearing for the purpose of establishing whether it was uneconomical, and whether it was to be in the public interest to continue and to subsidize the service.

Order No. R-31300 established the statement of costs and revenues of operating passenger services; Order No. R-6315 set up the costs and revenues of operating branch lines. Covering the three preceding years, such estimates were submitted to the Rail Transport Committee of the CTC which investigated and reviewed the statements. If the Committee verified the loss, according to Section 254(1) of the *Railway Act*, it had to determine whether the branch line was to be retained or abandoned. Subsection 260(a) of the *Railway Act* specified some of the consideration to be included in evaluating the public interest when the Committee pursued the same decisions concerning passenger services. If the Committee was to order continuance of a passenger service the federal government was committed to bear 80 percent of the losses. Section 256 specified the payment of subsidies to reimburse the railways for the losses incurred on uneconomic branch lines. Unlike uneconomic passenger services, the government reimbursed the railways for 100 percent of the branch losses.

The CTC could not exercise exclusive control over abandonments because Section 64(1) of the *NTA* allowed the Governor in Council (the Cabinet) to vary, at any time, orders or decisions of the CTC.

A. *PASSENGER SERVICE CONTRACTION AND SUBSIDIZATION: 1967-1980*

In passenger markets, both railways had responded to the inroads made by surface and air competition by attempting to reduce their services. CP had been more successful in its contraction of passenger train miles. Between 1945 and 1958, CN reduced its passenger train miles by 6.2 percent and CP reduced it by 22 percent, while in the period 1958 to

1967, CP doubled its reduction to 45 percent with CN managing only a reduction of 5 percent.²⁶ In the 1960's, in contrast to CP's contraction, CN had embarked on an aggressive marketing drive, experimenting with fare schedules and new equipment.

Although the *Railway Act* prior to 1967 did not specifically provide for the discontinuance of passenger train service, Sections 33, 34 and 35 of the *Railway Act* provided the Board with authority to handle such applications.²⁷ Decisions were made on a route-by-route basis, based on the general principle that profitable freight services should cross-subsidize unprofitable passenger services, cross-subsidization being eschewed in the *NTA*, the CTC was required to determine actual losses and to determine public need. Once a carrier had posted its intention to abandon service the CTC was then to determine the extent of the loss and the subsidization of the loss deemed to be in the public interest.

The decisions of the CTC indicated an inclination, in the face of strong political pressures, to subsidize rather than abandon uneconomic services. By 1973 only 11 of the 70 decisions of the CTC had permitted abandonment, with a resulting rise in subsidies (see Table III). Combined passenger subsidies of the two carriers by 1977 were a shade under a quarter of a billion dollars, representing a ratio of 1.65 to passenger revenue for CN and 2.11 for CP (see Table III). Inclusion of the 20 percent of the subsidy borne by the railways suggests that in 1977 subsidies per passenger mile were 15.3 cents for CN and 19.4 cents for CP. Rather than spurring increases in efficiencies, the bearing of 20 percent of the cost of production appeared to have encouraged the railways to disinvest in equipment and services. Between 1967 and 1977 CN reduced its passenger train miles by 42 percent and CP by 29 percent. CN's greater reduction accounted in large part for the Crown carrier's lower subsidy per passenger train rates after 1975.²⁸ CN, however, was to be less successful in reducing its services in the unprofitable Newfoundland Railway.²⁹

26. *Railway Transport—Part IV—Operating and Traffic Statistics*, Statistics Canada, Cat. No. 52-210 annual.

27. According to a decision in 1966, the Board "decided whether loss or inconvenience to the public consequent upon discontinuance of train service are outweighed by the burden that continued operation of the service would impose upon the railway to such an extent or to justify discontinuance of the service." J. GIBBERD & P. WESLEY, *AN ANALYSIS OF RAILWAY TRANSPORT COMMITTEE DECISIONS—1967-1980* p.7 (Research Branch, Canadian Transport Commission, Report No. 1982-06E).

28. *Railway Transport—Part IV—Operating and Traffic Statistics*, *supra* note 26.

29. In 1979 CN attempted to lay off 300 employees of the Newfoundland Railway. However, the federal government ordered CN to delay the lay-offs. In 1981 Transport Canada delayed the closing of two CN Express terminals in the Maritime provinces. R. WEAVER, *THE POLITICS OF INDUSTRIAL CHANGE—RAILWAY POLICY IN NORTH AMERICA* 201 (1985).

The railways, resentful of paying 20 percent of the cost of the subsidy, pressured for reductions in service and for 100 percent coverage of costs to be borne by the government. Alarmed at the rise in subsidies determined by the decisions of its regulatory agency, the government sought to contract directly with the railways for the provisions of rail passenger services. Unable to persuade the two carriers to form a passenger rail company, the government in 1977 established VIA Rail Canada.

The government was to contract with VIA for the provision of passenger services.³⁰ The Crown corporation was in turn to contract with the two railway companies for the provisions of passenger services by purchasing track right-of-way and operating crews. VIA provided equipment which was purchased at book value from the railways. The CTC established the basis upon which the railways charged VIA for these services and audited the statements of the railways, thereby assuring that they were in accordance with the approved costing principles of CTC Costing Order No. R-6313. The Railways Costing Regulation, as it was so referred, was essentially the same as Order No. R-31300, which constituted the basis for the compensation to the Railways of 80 percent of their losses. The CTC retained regulatory responsibility for safety, service quality, operations and discontinuances. The Cabinet, however, could overturn all decisions except those regarding safety, while the Minister of Transport was responsible for establishing service levels and for the resulting deficits, which were paid annually by the Minister of Transport.

B. FREIGHT TRACK ABANDONMENT AND CONTRACTION: 1967-1980

Over-extended by competing railways in the 1920's,³¹ many miles of branch lines were made redundant in proceeding decades as truck transport extended shippers' range of distribution and took much of rail's short-haul traffic. Most branch line mileage lay in the Prairies and, owing to the very low regulated rail rate for grain traffic, was used primarily for grain traffic. As the deviation between the cost of handling grain and the statutory rates grew even wider from the 1950's onwards, the railways responded by disinvesting in rolling stock, handling equipment and the branch lines. Despite such disinvestment, track abandonment was difficult. The grain collection system with its small grain terminals located on the branch lines, clustered around which were small communities, was

30. On January 1, 1977, VIA took over the marketing responsibilities of rail passenger transport. On October 28, 1978, VIA took over the Western Transcontinental service, and on April 1, 1979, VIA took over all passenger trains. *VIA Rail Canada Inc. ANNUAL REPORT* (1982).

31. Between 1923 and 1932 the track mileage of CN and CP expanded by 11 percent, *Canadian Pacific Ltd.—1923-71*, Statistics Canada, Cat. No. 52-202 annual; *Canadian National Railways 1923-71*, Statistics Canada, Cat. No. 52-201 annual. For a discussion of the competition between the two railways which led to this rail expansion, see *Supra* Note 27, at 56-57.

strongly resistant to a more centralized collective system of fewer branch lines and grain terminals. Fewer than 500 of the more than 1,900 miles on the Prairie provinces were abandoned in the 20 years following the end of the Second World War.³² Track utilization grew to be unequally distributed. The MacPherson Commission reported that although CN's branch lines represented 40 percent of the company's total mileage, they contributed only 4.4 percent of the total ton-mileage over the period 1956-1959.³³

Pressures from the railways to abandon unremunerative branch lines mounted in the 1960's. A list of proposed abandonments drafted by the Board, Prairie governments, and the grain trade met with disapproval from the federal government. The federal government's insistence in retaining control over branch line abandonments was shown prior to the passage of the NTA. In 1967 the government issued an order prohibiting the abandonment of 17,000 miles of Western lines until January 1, 1975. This left only 1,800 miles "unprotected" such that they were subject to being abandoned if the railway could prove its case before the CTC.³⁴

Such a freeze meant that the abandonment process was launched after January 1975. It was to meet with further constraints. The Crow rates remained, and the gap between the costs of moving grain and revenue widened, to the point that by 1980 statutory grain rates covered only 20 percent of the actual costs of carrying grain.³⁵ As grain traffic that did not originate on designated uneconomic lines did not receive government subsidies, the railways, unable to abandon grain traffic, continued to disinvest in their grain carrying rolling stock and branch lines. Box car fleets shrank and train speeds had to be reduced.

The deterioration in the grain transportation and handling system brought forth a series of reports on the Crow and the branch line systems. The Hall Commission was appointed in 1975 to inquire into the areas served by the 6,283 miles of protected lines. Reporting in 1977, the Commission recommended 2,165 miles should be abandoned over the five year period beginning in 1971, 1,813 miles should be kept as the Basic Network and 2,344 should be turned over to a newly formed institution, known as the Prairie Rail Action Committee (PRAC).³⁶ The government instructed the PRAC to decide on the disposition of the 2,344 miles. By

32. *Supra* Note 27, Table 3.2 at 63.

33. *Supra* Note 21, Vol. II at 128. The Commission's examination of CP's data in 1948 and 1954 "showed no evidence of a pattern different from that found on CN."

34. J.C. GILSON, MINISTER OF SUPPLY AND SERVICES CANADA, WESTERN GRAIN TRANSPORTATION—REPORT ON CONSULTATIONS AND RECOMMENDATIONS 7-8 (1982).

35. *Id.* at 1.

36. MINISTER OF SUPPLY AND SERVICES CANADA, THE REPORT OF THE GRAIN HANDLING AND TRANSPORTATION COMMISSION 520-521, Cat. CP32-26/1977-1 (1977).

Order in Council, the government insured protection of the basic network to the year 2,000. The PRAC recommended 958 miles to be added to the basic network.³⁷ The Neil Report, commissioned by the 1979 federal Conservative government, recommended that 592 miles should be added to the Basic Network and 1,011 miles (375 miles to be served by off-track elevators) turned over to the CTC for hearings.³⁸ The incoming Liberal government accepted these recommendations in 1980.

The abandonment process included an investigation and review of the statements of costs and revenues according to Order No. R-6313 by the Railway Committee of the CTC. If the Committee verified the losses, according to Section 254(1) of the *Railway Act*, it had to determine whether the branch line was uneconomic and if it was, it had to decide if the line was to be retained or abandoned.

There were delays in processing abandonment applications. The costing order took time to assemble, while the Railway Committee was fully occupied in assessing the extensive subsidies it was to give for passenger services. The first subsidy payments were made in 1970. Over the decade 1970-1980 the two railways received over \$1 billion of which CN received almost \$550 million (see Table IV). CN also achieved more branch abandonments. Over the five year period following the removal of the freeze in 1975, CN's length of track in the three Prairie provinces shrank by 11 percent while CP's shrank by 6.9 percent.³⁹ Non-compensatory rates for transportation of grain, however, caused the railways to continue their disinvestment in branch lines and grain rolling stock.

The government's immediate response to the deteriorating track and rolling stock was the introduction of a rehabilitation program and the purchasing of hopper cars for the railways. In 1977 the federal government agreed that 1,300 miles of CP and 1,015 miles of CN lines would be rehabilitated, with a projected expenditure from 1977 to 1984 of \$298.1 million for CN and \$196.8 million for CP.⁴⁰ In 1972 a federal program to

37. D. NEIL, MINISTER OF SUPPLY AND SERVICES CANADA, RECOMMENDATIONS TO THE MINISTER OF TRANSPORT ON PRAIRIE BRANCH LINES vii, Cat. T22-48/1979 (1979).

38. *Id.* at xviii.

39. *Railway Transport, Part III, Equipment, Track and Fuel Statistics*, Statistics Canada, Cat. No. 52-209 annual (First Main Track Mileage, by Province, at December 31, 1975 & 1980). CN's total net route mileage shrank by 6.7 percent and CP's by 5.10 percent over the period 1975-80. According to CTC's estimates, the following decisions were made concerning decisions to abandon Prairie branch lines:

	Number of decisions to abandon	Miles approved for abandonment	Miles not approved
1975-80	76	1,840	176

Supra Note 27, at 73.

40. *Supra* Note 34, at 9.

purchase new grain hopper cars was initiated, such that by 1981 a total of 10,000 cars had been purchased or leased to the railways. In 1974 the federal government and the railways launched another program to share the costs of repairing over 7,400 box cars, while in 1979 the Canadian Wheat Board purchased 2,000 hopper cars at the producers' expense. The provinces of Alberta and Saskatchewan each purchased 1,000 hopper cars with Manitoba acquiring 400 cars on short-term lease.⁴¹

The 1983 *Western Grain Transportation Act* introduced a phase-out of the Crow Rates. The *Act* proposed to pay the so called "crow benefit" to the railways and not to the shippers. Defined as the difference between the estimated total railway cost of transporting grain in Western Canada and the revenue derived from the statutory rate paid by producers, the railways received over \$600 million in the first year. The actual freight rates will rise over time, leading to a subsequent fall in the subsidy. The federal government, however, agreed to continue direct subsidies, to keep purchasing hopper cars and to contribute to railway upgrading, thereby involving expenditures of \$250 million over five years.

C. COMPENSATION FOR OBLIGATIONS

The substitution of direct compensation for that of rail internal cross-subsidization as a means of paying for imposed public obligations led to institutional structures that were largely in the interest of the railway cartel. These interests were especially well served by the establishment of VIA Rail and the passage of the 1983 *Western Grain Transportation Act*.

Despite the mix of private and government owned carriers, the rail cartel was well served because it acted in unison. In negotiating over compensation the government and the regulatory agency were faced with a unified rail duopoly, one which was strongly resistant to competing in the provision of track and carriage. The strength of the joint railway cooperation would appear to have been sufficiently strong to have repelled any intention the government may have had to use the information it could have derived from CN in its effort to negotiate compensating subsidies with the privately owned CP. Except in certain decisions concerning employment, CN was in turn able to obtain equal regulatory treatment from the CTC and the government.

Despite the inherent problems in allocating joint and common costs, the rising costs registered by the railways for their rail passenger services would suggest that they were successful in obtaining subsidies to cover a large share of their rail passenger costs. Certainly, the rise in subsidies⁴²

41. *Id.*

42. Calculations of the extent of railway losses before 1970 are difficult to evaluate owing to differences in accounting methods employed by the two railways. Estimates, gleaned from vari-

obtained by the railways and the declines in quality of service were sufficient to have caused the government to form VIA and to remove the responsibility for passenger services from the railways.

The railways, however, retained responsibility for the operation and maintenance of the trains on the track that they owned, operated and maintained. The railways did not compete in providing these services nor was VIA directed nor powerful enough to stimulate competition by a contracting process. VIA was not permitted to audit the railway's charges nor, when faced with the duopoly, was it able to terminate contracts.

Using the same costing regulation that had operated under the NTA's passenger rail subsidy program, the railways were able to receive full (not 80 percent) compensation for their long-run variable costs. Facing audits by the Railway Committee that merely ensured they complied with the Commission's costing regulations, the railways were able to pass along to VIA, and ultimately to the taxpayers, the high wages and costs associated with restrictive work rules that had been sustained under the rail duopoly.⁴³ In 1980, VIA's payments to the two railways (plus the remaining passenger subsidies) totalled \$323.7 million, representing 7.34 per cent of the railways' operating revenue.⁴⁴ In 1977 passenger subsidies were 6.33 percent of operating revenues. Payments to the railways in 1980 accounted for 70 percent of VIA's operating costs with equipment maintenance constituting the largest cost item and accounting for 36 per cent of the total, while train crew wages accounted for 20 percent.⁴⁵

These cost levels were considerably in excess of those incurred by the government owned but more powerful American passenger railway and contractor, Amtrak.⁴⁶ By 1985-1986, rising administrative and railway contract costs had involved VIA in shortfalls that required \$600 million in government subsidies. The proposed 1986 *National Rail Passenger Transportation Act*⁴⁷ intends to provide VIA with a clear legislative mandate that it had been lacking. Along with specific financial

ous sources, suggested the deficit per passenger mile for CN in 1965 was 2.9 cents and for CP it was 2.8 cents. E. Johnson, A. Ray, P. Bunting and K. Mozersky, PRICING AND SUBSIDY OF AIR AND RAIL PASSENGER TRANSPORT 74 (Research Branch, Canadian Transport Commission, Report No. 246 (1976)).

43. Cubukgil & Soberman, *Costs of Rail Passenger Service in Canada: An Examination of Institutional Problems*, 25 TRANSP. RESEARCH F. 69-75 (Alberta 1984).

44. CN and CP' operating revenues were \$4,405.9 million in 1980, and \$3,179.3 million in 1977, *Railway Transport—Part II—Financial Statistics*, Statistics Canada, Cat. No. 52-208 annual.

45. CUBUKGIL & SOBERMAN, *The Cost of Rail Passenger Services in Canada: An Examination of Institutional Problems* 26 (prepared for the Transportation Development Centre—TP5823E (September 1984)).

46. *Id.* at 57-58.

47. BILL C-97: *An Act Respecting Rail Passenger Transportation*, First Reading, Feb. 24, 1986. 1st Sess. 33rd. Parliament, 33-34-35 Elizabeth II (1984-85-86).

targets, the Bill proposes to provide VIA greater powers in negotiating contracts with the railways. Compensation is to be modeled on the arrangements used by Amtrak, whereby direct costs incurred by the railways will be covered, plus a performance-based incentive payment that will provide a contribution towards joint and common costs.⁴⁸ For the purposes of negotiating contracts with the railway, VIA will be permitted access to railway costing information it is presently denied.⁴⁹ As a result, although VIA will be able to exert greater pressure on the railways to produce desired quality of service, it will still face two suppliers not only unwilling to engage in competitive contracting, but also able to deny entry of potential competing carriers by refusing to contract for the use of their tracks.

In the case of imposed obligations in the freight sector, the government, in retaining extensive branch line mileage and removing them from the regulatory process of the CTC, favored the shippers rather than the railways. Similarly, retention of the Crow rates to below compensatory levels until the passage of the *Western Grain Transportation Act* in 1983 favored the shippers. The response by the railways to "frozen" branch lines and non-compensatory rates was characterized, however, by identical policies of minimum maintenance of track and disinvestment in rolling stock.⁵⁰ Both railways in turn benefited by direct government expenditure on rolling stock. Similarly, consistency in approach to the compensatory grain rate issue resulted in the railways, rather than the shippers, receiving the direct compensatory benefits.⁵¹

48. *Id.* at § 24.

49. *Id.* at § 38.

50. *Supra* Note 36, at 58-59.

51. There were shippers and processors who also favored the Crow benefit accruing to the railways rather than the shippers. The Gilson report had recommended the Crow subsidy be given to the Railways in 1982-83. It would then be partitioned between them and the shippers until 1989-90, when the split would be 19 and 81 percent respectively.

The government issued its response to the report in February 1983. Gilson's proposal of a phased increase was accepted, but only until 1985-86. After this point a 50-50 sharing between shippers and railways would be achieved. Many Western grain shippers, however, were unwilling to take a subsidy and leave themselves open to corresponding rate increases. Eastern grain lot feeders in turn did not wish to see a consequent fall in feed grain prices in the West. As a result, the *Western Grain Transportation Act* contained provisions such that beginning in 1983-84, the entire Crow benefit was paid to the railways, rather than the 30-30 split proposed by the Minister of Transport in February 1983. Such payments to the railways had the further apparent advantage to the government that it would give it leverage over the rail companies with respect to the enforcement of infrastructure expenditures. NORRIE, *Not Much to Crow about: A Primer on the Statutory Grain Freight Rate Issue*, CANADIAN PUBLIC POLICY 434-45 (Dec. 1983).

IV. THE PERFORMANCE OF THE CARTEL FROM 1967 TO 1981

A. *Rates of Return*

The rail duopoly clearly possessed monopolistic power. Capital requirements limited entry. Ease of exit was limited by the governments' susceptibilities to the pressure from communities faced with line abandonments and service cessations. Legislation introduced in 1967 served to make explicit collusive rate discrimination, while regulating minimum and maximum rates. Unlike industries not inherently monopolistic, such as trucking, government regulation acted to enforce and enhance rather than create the possibilities of transforming wealth from the shipper/consumer to the rail carriers and from the carriers to those suppliers of inputs, such as labor unions, possessing monopolistic power.

An examination of the indicators of performance suggest that along with the rail cartel, changes in technology and economic structure, government policies of investment and regional development, and the imposition of public obligations have all had substantial impacts. As a result, the performance of the cartel in responding to these exogenous changes has become of greater interest.

Evidence would suggest that with the exception of the statutory Crow rates, the rail cartel was successful in obtaining more than adequate compensation for the imposed public obligations. In the case of the response of the cartel to technical change, the difficulty is in discerning whether the constraints imposed by the cartel or by the other imposed regulations thwarted the rate at which technical potentialities were exploited.

There are also problems with the measurement and interpretation involved in evaluating the performance of the cartel as indicated by the cost levels attained, the rates charged, the extent of excess capacity and the achieved rates of return. These are factors that limit the usefulness of considering the welfare implications of resource misallocation resulting from cartel practices.⁵² Imprecision in measurement also presents difficulties in interpreting the shifts in returns between input suppliers, the railways and shippers, and the effect that these shifts have played in pressuring changes in the cartel.

Essential to such interpretations are accurate measures of economic rates of return. Readily available data, however, permit the calculation of the ratio of net revenue to book value which is an accounting measure of the rate of return. Such accounting returns, however, cannot be assumed to be the same as the economic rate of return. The conditions for such an

52. Measurement of static inefficiencies (deadweight loss), involving some notion of consumers surplus, require estimates of marginal cost and rate elasticities of demand. Estimates of both are rarely acceptable, and when they are, calculation of the surpluses and losses involve disputable aggregations of utilities.

equality are highly restrictive,⁵³ such that it would be improbable that the accounting rate equaled the economic rate of return that also equaled the present value of the entire net revenue stream with the initial capital cost. Yet measures of economic rate of return facilitate the evaluation of cartel power and market performance because it is the output restrictions under cartelization that produce the economic rate of return. Thus, accounting measures, while they must be considered inappropriate in evaluating market performance, can be used instead to infer whether one railway generates more dollars of profit per dollar of assets than another.

Such inferences also have to be qualified. There are problems of measurement common to most railways, such as the treatment of sunk costs,⁵⁴ some of which are exclusive to the Canadian railways. In particular, the lack of compensation for the carriage of export grain could be expected to have reduced net revenue and to have caused disinvestment in branch lines and rolling stock. Given these substantial qualifications, the estimates of net revenue to book value for CN and CP for the period 1967-1980 displayed in Table V indicate a consistently higher rate of return for CP. Compared with similar measures of accounting rates of return from a selected list of 37 Class I U.S. railroads taken from a study by Keeler⁵⁵ (see Annex 3), CP appears to have performed better than average, while CN appears to be in the bottom group. Over the period 1966/67-1970, out of 22 U.S. railroads, seven exceeded CP's average return of 6.4 percent and nineteen exceeded CN's average return of 3.62 percent. Twenty of the twenty-two railroads exceeded CN's average return of 3.7 over the period 1971-1975, but only nine exceeded CP's average return of 7.2 percent. During the period of 1976-1979, CP achieved an average return of 10.0 percent with CN having a 6.8 percent return. Some 12 railroads exceeded the average return of CP, and 21 of the 37 exceeded CN's. Of the two U.S. railroads which are slightly larger in rev-

53. Fisher and McGowan have established the conditions under which the accounting and economic rate of returns are equal. They state that,

Unless the proportion of investments with a given time shape remains fixed every year, and unless the firm simply grows exponentially, increasing investments in each and every type of asset by the same proportion for every year, the accounting rate of return to the firm on a whole cannot even be expected to be constant, let alone be equal to the economic rate of return.

FISHER & MCGOWAN, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits* 73 AMER. ECON. REV. 84 (1983).

54. Railways could be considered viable if their capital investments earned similar returns to those investments of comparable risks. Ideally, calculations of such opportunity cost of capital should consider separately sunk and other capital. The latter should be calculated at their replacement cost, measured at current prices using contemporary technology. As for sunk costs—such as the grading of land—they need never be incurred again, and hence the railway need earn only scrap or liquidation value on such capital.

55. T. KEELER, *Railroads, Freight and Public Policy*, in STUDIES IN THE REGULATION OF ECONOMIC ACTIVITY 9-10, Tables 1-2 & 1-3 (The Brookings Institute, Wash. D.C.).

enue freight, and smaller than CN and CP, namely Southern Pacific and Illinois Central Gulf, CP attained average returns in all periods in excess of both railroads, while CN exceeded both only in the period 1976-1979, having been third previously.

B. Markets and Rates

The pre-1967 cartel, subject to the Board's approval for rate changes and the requirement to maintain class rate equalization, was transformed into a rate discriminating duopoly. Free from rate regulation, the major exception being export grains, the two railways responded by refining their value of service pricing. Typically, associations of shippers collectively negotiated rates on an annual basis with teams of negotiations from the two railways.⁵⁶ Rate levels were determined according to market and modal competition, with the variable costs of the particular movement providing a floor below which the railways could not charge. In negotiating group or average rates, the shipper associations presented their members within particular zones with rate structures that were identical, irrespective of the rail carrier or location within the zones.⁵⁷

There was limited service competition between the two railways, in part a result of the regulatory enforcement of separate rail markets. As competition was possible only when the line of the two carriers was available to carriers, the location of lines clearly limited shippers' choices, resulting in the use of trucks. Direct access to alternative rail carriers was available to those shipping within interswitching limits, while running rights possessed by a carrier extended the alternatives available to the shipper. Interswitching limited operations, for the most part, such that most shipping located within access to one line could only choose to deal with another located within four miles of a designated interswitching point

56. The Canadian Freight Association (CFA), formed in 1883, is the body which collectively represents the Canadian railways. For a description of the CFA and its workings, see *COMPETITION AND REGULATION IN THE RAILWAY FREIGHT INDUSTRY* Appendix 1 (Research Branch, Canadian Transport Commission, Report No. 1982/09E (May 1981)).

57. "For the purpose of negotiating rates, which requires a concerted effort with an industry over a relatively short period, collective action is vital. Shipper associations may be used by the railways for communication and negotiation with all industry members. . . . Shippers are often the ones who initiate these meetings between industry and the railways since it ensures one rate for all shipper—members, irrespective of their size and irrespective of distance from the mainline or from the market place."

"Collective negotiations do not preclude firms from seeking separate considerations from the railways either by agreements presented within or outside the collective process. However, if special situations are numerous, separate negotiations are appropriate. For example, the negotiation of rates on British Columbia's forest products to North American markets is carried out by the Transportation Committee of the Council of Forest Industries. The negotiation of rates on inbound products and supplies is conducted by the individual forest product companies."

CP Rail Position on Collective Rate Making 26-28 (submitted to Transport Canada (1983)).

with that railway.⁵⁸

Alternative rail carriers were more frequently available on cross-border routes than on domestic routes. Estimates for 1981 suggested that 35 percent of traffic by total freight billing, defined as traffic in which CN or CP participated and including American carriers, could have been subject to intra-rail competition. Of this figure, 19 percent was domestic and 16 percent was cross-border.⁵⁹

The estimate was that 40 percent cross-border traffic was subject to intra-rail competition. The potential for competition differed across the country. The opportunities for rail competition was greatest in Eastern Canada, where over 40 percent of the originating and almost 40 percent of the terminating domestic and international traffic by revenue was potentially subject to intra-rail competition. In the Maritimes and the West, the percentages dropped to 24 and 28 and 23 and 32 percent, respectively.⁶⁰

The collusion between the railways and the shipper committees could be seen to have facilitated the railways' concentration on high volume, low value resource traffic. Moving into the carriage of long-haul, bulk commodities, the railways began to sell increasingly not to the market but to well defined specific shippers and shipper groups. Rate levels would appear to have moved towards a modified form of Ramsay pricing,⁶¹ in which shipper groups were charged a rate equal to the incre-

58. Subsection 32(9) of the *Transportation Act* stipulates that where an agreement for an agreed change has been made between a carrier and a shipper, any other shipper may with the consent of the carrier become a party to the agreement. It would appear that transport law, as well as favoring the carrier over the shipper in issues of agreed changes and other rates, does not and has not granted shippers immunity from the anti-combines law in Canada. *The Unfolding Debate on Competition or Collective Action in Canadian Railways*, BUREAU OF COMPETITION POLICY—CONSUMER AND CORPORATE AFFAIRS (April 1984).

59. T. HEAVER, *Competition and Collective Pricing Between Railways in Canada* 57, Table 6 (prepared for Transport Canada, No. TP4302 (Jan. 1983)). There are reasons to suggest these estimates give lower rather than upper limits to the degrees of potential intra-rail competition. The data excludes for instance, the extent of extended rail competition facilitated by trucking services, some of which are owned by the railways. Secondly, the data fails to distinguish that portion of local traffic that could be classified as competitive because such traffic is aggregated with competitive traffic during negotiations between the railway and a shipper that has plants that are both competitive and local.

60. *Id.*, Table 9 at 61. These estimates, however, are the percentages of rail revenue arising from traffic between competitive stations by region. The distinction between intra-regional or inter-regional traffic is not made.

61. Ramsay pricing, a variant of value-of-service pricing, was established by F.P. Ramsay in his article entitled: *A Contribution to the Theory of Taxation*, 37 *ECON. J.* 47-61 (March 1977). Confirmation that the railways have practiced such policies is provided by Heaver and Waters, *Public Enterprise Under Competition: A Comment on Canadian Railways*, in *MANAGING PUBLIC ENTERPRISES* 156 (W.T. Stanbury and F. Thompson eds. 1982). A test of Ramsay pricing would be to estimate demands and marginal costs of the two carriers, calculate the so-called "Ramsay number" for each product, namely the percentage deviation of price from marginal cost times

mental cost of the service they received, plus a share of the fixed cost inversely proportional to the shippers' elasticity of demand for the rail service.

Services were modified such that integrated rail-truck carriage was placed in competition with for-hire trucking. In accommodating this specialization, the railways applied and developed carriage equipment and operating technology. There was a movement away from general traffic equipment such as the box car towards specialized unit trains with their own advanced technical characteristics. The railways developed the unit train using robot power, solid trains, 100-ton covered hopper cars, large capacity mechanical refrigerators, bulkhead flat cars, and auto pack passenger and truck cars. Supplementing these advances in equipment were the introduction of automatic hump yards, centralization of control and communications, and the processing of rail computer technology.

Advances in technical application did not occur in all markets. The fixed Crow rate, along with the practices of regulating car deployment, served to retard advances in grain handling and distribution. The emergence of truck movement substituting for rail in the primary collection process and the replacement of inefficient small elevators alongside branch lines by inland terminals enjoying economies of scale and the deployment of low cost unit trains did not take place primarily because of the retention of the Crow rates. The fixed rates, below cost and the same for the small terminal on a branch line as for an inland terminal on the main line, meant the inland terminal operator could not capture the cost savings that would accrue to the railways from the introduction of the low cost unit trains.⁶²

As well as experiencing protracted contractions in Prairie branch lines, the railways faced constraints in the use of rolling stock.⁶³ The low returns from shipping grain had led to their disinvestment in rolling stock. Although the Canadian Wheat Board, a crown corporation, purchased grain hopper cars and permitted the railways to use them free of charge, the Board and not the railways continued to assign the cars to the particular elevators.

The retention of the Crow also constrained the railways' exercise in Ramsay pricing. Grain shipments were charged rates below long run variable costs. Estimates made by Snavely⁶⁴ for 1980 suggested the long-run variable cost of shipping exceeded other Crow rates by a factor of

the elasticity of demand, and then observe the equality of the Ramsay numbers for each product. It would appear that Heaver and Waters did not use this test.

62. Maister, *Technical and Organizational Change in a Regulated Industry: The Case of Canadian Grain Transport*, in *STUDIES ON REGULATION IN CANADA* 181 (W.T. Stanbury ed. 1978).

63. *Id.* at 164.

64. Snavely, *1980 Costs and Revenues Incurred by the Railways in the Transportation of Grain Under Statutory Rates* (prepared for Transport Canada (1982)).

four (see Annex A.1), such that rates would have had to have risen from \$4.96 to \$20.41 per ton to have been fully compensatory. The revenue yielding a fully compensated variable cost for grain would have been \$539.2 million. As \$129.8 million was raised from the statutory grain rates, the revenue needed for full compensation would have been \$409.6 million, or 11 percent of the two carriers' total freight revenue in 1980.

The rate levels established by the railways reflected the general demand for transport and the modal cross price elasticities.⁶⁵ In general, manufactured goods, with their high value and low freight rates embodied in final good price, had less elastic general transport demand, but high modal cross price elasticities due to the availability of competing truck carriers. Owing to geographical factors that limited alternative modes and by exercising cartel constrained intra-rail competition, the railways appeared to have set rates on bulk commodities shipped from the West on the basis of general transport elasticities rather than on modal cross price elasticities.⁶⁶ By 1981, total (direct and indirect) rail charges as a percentage of output (valued in producers prices sold domestically) were 7 percent for coal (38 percent for exported coal), 5.3 percent for iron mines and 8.1 percent for other non-metal mines (see Table VI). Among the manufacturing industries, the percentage for the shoe industry was 0.2 percent and 0.8 percent for motor vehicle manufactures (see Annex A.2).

As the long run costs of transporting export grain grew in excess of the fixed Crow rates, a growing portion of the railways' fixed costs could not be covered. Such costs had to be borne by non-grain traffic, and the railways could be expected to increase rates on traffic that exhibited less elastic demand for rail transport. Given these cartel established rates that

65. The elasticity of demand for transport is given by the product of the elasticity of the final-goods demand and the proportion of transport costs in the final goods price. Where there are competing modes, the actual demand for a given mode will depend on the modal cross price elasticities.

66. According to estimates made by Heaver, the following commodities had low percentages of railway revenue earned on competitive traffic:

Commodity	Domestic Traffic	Total Traffic
Lumber	11	9
Sand and Gravel	10	
Gypsum	5	4
Coal	4	4
Phosphate	0	0
Pulpwood	0	0
Sulphur	0	0
Copper	0	0

Railway revenue earned on competitive traffic is defined as that moving between competitive stations in Canada or as transborder traffic originating or terminating at competitive stations on CN or CP. *Supra* Note 59, Table 10 at 62.

maximized profits, the subsidization of losses on export grain by means of more "efficient" cross-subsidization of losses on export grain was not possible. The most efficient form of rate discrimination was being practiced. As a result of increasing grain exports, however, losses from the Crow rates increased, and as compensating rate increases on other traffic were not possible, downward pressure on the railways' rate of return could be expected to have occurred.

Elements within the Prairies, whose grain farmers, thanks to the Crow, were the recipients of what was in effect an income maintenance supplement, perceived the Crow to have two adversely distorting effects. Firstly, the retention of rates on export grains lower than for processed grain products created an incentive to export the former rather than the latter, which in turn discouraged grain processing industries on the Prairies. Secondly,⁶⁷ it was perceived that bulk commodities, in particular coal and potash that were exported primarily from the West, bore not only a disproportionate share of the railways' fixed costs at the expense of the real incomes of the region, but also incurred the higher rates compensating for the revenue lost from transporting export grain at rates below long run marginal cost. There were two other related assertions concerning rate distortions perceived to be to the disadvantage of the West and the Prairies in particular. These were the so-called raw materials versus finished products and the long-haul, short-haul discrimination. It was asserted⁶⁸ that as in the case of grain, further processing and manufacturing were hindered in the Prairies because finished goods were charged higher freight rates than raw materials. Long-haul rates, which usually applied to products shipped from Central Canada to the West Coast were often lower than rates to points on the Prairies because shippers faced water competition using the Panama Canal and low priced, off-shore imports from Pacific rim countries.

Although empirical evidence⁶⁹ modified or refuted most of these perceptions and assertions concerning the incidence of the railways' rate discrimination, they retained political credibility in the Prairies and were to play a part alongside the forces urging the dismantling of the cartel.

C. Capacity Utilization

To railways vertically integrated into carriage and track, and charac-

67. For a discussion of these perceptions regarding rates, see K. Norrie, *Western Economic Grievances—An Overview with Special Reference to Freight Rates* (paper presented to the Workshop on the Political Economy of Confederation in Ontario and sponsored by the Economic Council of Canada and the Institute of Intergovernmental Relations at Queen's University on Nov. 8-10, 1978).

68. Heads, *Allegations of Rail Freight Rate Disparities in the Canadian Prairie Provinces since the 1967 National Transportation Act*, 17 *TRANSP. RESEARCH F.* 379-86 (1977).

69. *Id.*

terized by economies of scale and scope over ranges and combinations of outputs, Ramsay pricing offers the prospect of acceptable cost recovery. So long as the rate charged to the price elastic shipper is higher than the incremental cost of the service, the rate contributes to the railways' fixed costs.⁷⁰

While yielding advantageous outcomes, such rate discrimination also produced sets of rates at demands that under utilized capacity. The retention of rates on export grain at below variable costs also placed a constraint on the railways' exercise of Ramsay pricing that added to the creation of excess capacity. Similarly, the constraints imposed by government on the railways' withdrawal from freight and passenger markets at a time of increasing productivity in carriage contributed to excess capacity in track.

Constituent parts of the rail network, such as track, locomotives, cars and marshalling yards, can be conceived as having a range of outputs, beyond which average or incremental costs rise. Determining and estimating these ranges has not been attempted. Instead, assuming that optimal flow (supply) is proportional to capital stock, measures of the use of track and rolling stock have been estimated in an attempt to obtain an indication not of the potential capacity of the railway network, but rather an indication of the average use of its constituent parts and their relationship to changes in demand, abandonment and labor policies.

Contemporaneous changes in motive power and rolling stock saw shifts away from steam into the more powerful diesel-electric locomotion and a movement away from the requirement of commodities to fit into the freight cars available into equipment built specifically for commodities. Introduced in 1948, diesel-electric locomotives had replaced steam by 1965, their average horse power reaching 1,917 in 1975 and rising to 2,056 in 1981.⁷¹ In rolling stock, there was a movement away from box cars towards specialized cars such as piggybacks, refrigerated cars, hopper cars and unit trains.⁷² In piggybacks, the unit of transport is the track trailer instead of a box car, making the service available on a door to door basis. As a result, the piggyback permitted the combination of

70. In terms of welfare, raising prices maximizes the consumers surplus and provides the lowest average rates, subject to the requirement of economic adequacy for the carrier. They minimize the amount of sales reduction caused by rates rising above marginal costs and thus minimize the violation of the rule that any output should be produced that covers its resource cost.

71. *Supra* Note 39.

72. *Id.* In 1958, 6 percent of CN's total freight cars were hopper cars. *Railway Transport*, Statistics Canada, Cat. No. 52-209 (1958). By 1981, the percentage had risen to 21 percent, while the respective figures for flat cars were 5 and 13 percent. CP's fleet had 8 and 5 percent, respectively, of hopper cars and flat cars in 1985 and 21 and 10 percent by 1981. *Railway Transport*, Statistics Canada, Cat. No. 52-209 (1981).

lower terminal costs of trucking with the lower line haul costs of rail. Unit trains were developed to enable more efficient transport of coal, the longer trains allowing substantial reductions in switching expenses. Hopper cars, with their large capacities, yielded lower costs of carrying grain by their facilitation of higher utilization, lower maintenance and reduced terminal costs.

In aggregate, average freight car capacity reached over 66 tons in 1980, an increase of over 27 percent over the average for the period 1958-1967 (see Table VII). For the most part, utilization of freight cars over the period 1967-1980 showed a steady increase, with downturns occurring with the economy in 1975, as did car load factors (see Table VII). While increased productivity resulted from greater average payloads and higher utilization, much of the technical change contributing to this increased productivity, such as improved rolling stock, electronic control and improvement in maintenance, also contributed to excess capacity. More traffic could be carried on fewer roadways.

Measures of output and track utilization—revenue ton-miles and freight and passenger train ton-miles—indicate a not surprising close correlation between output and utilization (see Table VII). Yearly movements since the passage of the *NTA* suggest a trend of increasing utilization, with a downturn in output and utilization in the mid-1970's. In the early 1960's, ton-miles per mile of track began steadily to rise as a result of increasing demand without significant increase in track mileage. After 1975, track mileage started to decline, while demand increased, resulting in rapid increases in ton-miles per mile of track. Although CP achieved a higher rate of utilization than CN, the gap narrowed in the late 1970's in part because CN was able to shrink its route mileage over the period 1975-1980 by 6.7 percent in comparison with CP's reduction of 5.0 percent.⁷³

D. Labor Productivity and Total Factor Productivity

The introduction of the diesel locomotive, higher capacity freight cars, improved signals and automated classification yards permitted the operation of longer, higher capacity trains requiring smaller crews. Automation of train control and clerical operations further reduced manpower requirements, thereby adding to the potential for negotiation between unions and the railways.

Threatened by unemployment, organized labor, which by 1950 represented 90 percent of the workers⁷⁴ in the industry, was resistant to

73. *Id.*

74. A. W. CURRIE, *CANADIAN TRANSPORTATION ECONOMICS* 689, Note 2 (1967).

change.⁷⁵ Elaborate work rules had been built up, the result of successive bargaining by the unions in response to occupational risks. In the face of irregular operations, in which work assignments had led to discrimination and favoritism, the unions had bargained for seniority. Work rules and seniority constituted a rigid system, and this was no more than existed in the running trades (locomotive engineers, firemen, conductors and trainmen). Remunerated on a dual basis,⁷⁶ combining miles traveled and time taken, the running trades entered the 1970's, almost two decades since the widespread introduction of the diesel engine, with a payment system that was based on the much slower steam engine. Senior employees, with their first choice of runs, received high wages or, by limiting their monthly wages, lengthy periods of leisure.

Union-railway agreements have generally provided for uniform scales across the country and have usually been based on historical relationships between trades. Rail rates of pay differed substantially from regional averages (see Table VIII).⁷⁷ In the case of the Maritime provinces, rail wage rates were considerably in excess of the average wage.⁷⁸ Such a rail wage structure, however, complimented a general government policy that instead of permitting lower wage rates in regions of heavier unemployment, it favored reductions in non-labor input costs. Transport costs, for instance, on goods exported from the Maritimes were fixed by statute at low levels with the understanding that they would increase the region's export sales, and which in turn would enhance employment, income and growth.

75. In 1965 CN ordered crews to "run through" a number of terminals in Northern Ontario and Alberta. Terminals were approximately 100 miles apart, and were established at the turn of the century when steam engines of the time had to be serviced frequently. It took crews approximately 8 hours to complete a run of this length, with some allowance for signing on and off work and checking the equipment. Diesel locomotives, in contrast, needed not to be served so frequently, and crews often completed runs of 200 miles or more within 8 hours. Although the running trades were paid such that the longer runs did not result in any reductions in remuneration, the unions faced loss of jobs at the threatened stops and claimed that CN had been heavy handed in their introduction of the changes. The dispute was investigated by Mr. Justice Freedman, who recommended procedures for negotiation between unions and the railways over technical change. S. Freedman, *Report of the Industrial Inquiry Commission on Canadian National Railways "Run-Through"*, (Ottawa, Queen's Printer (1965)).

76. M. FLOOD, PAYMENT SYSTEMS AND THEIR DEVELOPMENT IN THE RAILWAY RUNNING TRADES (Economics and Research Branch, Canada Development of Labor, Ottawa, Queen's Printer (1968)).

77. For an example of the effects of national wage and work rule agreements, see Simpson and Peters, *The Economics of Mileage Restrictions for Railway Workers in Western Canada*, 38 RELATIONS INDUSTRIELLES 95-103 (1983).

78. In 1980, the average weekly wage in Canada was \$317.38, while in Newfoundland it was \$288 and in New Brunswick it was \$283. The average weekly wage in CN equipment maintenance was \$391.40 a week. *Railway Transport, Part III, Employment Statistics*, Statistics Canada, Cat. No. 52-212 and *Canadian Statistical Review*, Cat. No. 11-003.

The relatively high wages earned by railway workers in the areas of higher unemployment intensified the pressure to resist manpower reductions, with the result that government as well as the participants in the bilateral negotiations played a role in the resolution of labor deployment. CN, the crown carrier with its inherited capacity in the higher areas of unemployment in the East, was to incur more frequent intervention from the government.⁷⁹

Although there was a growth in revenue ton-miles and a drop in employment of 30 percent between 1967-1980, the average payroll remained roughly the same percentage of total expenses until the advent of VIA (Table VIII). Such proportions testify to the success of the unions at retaining labors' share of the cartel's return and their priorities of sustaining wage rates and work rules rather than employment levels. Although CN initiated its "profit centres" policy in the mid-1970's,⁸⁰ examination of the employment figures for the whole of the period 1967-1980 indicates CP was able to reduce employment at a greater rate than was CN. By 1980, total employment at CP was down by 44 percent over the average for the period 1960-1967, while CN's was down by 25 percent (see Table VIII).

An examination of labor categories suggest differences in employment levels between the two carriers according to whether labor contracts were the result of joint CN-CP negotiation with the unions or between the individual carrier and the union. The latter category included contracts in road and equipment maintenance. While CN was able to reduce its employment in road maintenance over the period 1967-1980 by 12 percent as against CP's 14 percent, it actually experienced an increase in employment in equipment maintenance of 2 percent as against a contraction of 10 percent by CP. In contrast, employment in road freight crews, with which work rules were governed by jointly negotiated contracts, CN achieved a reduction in employment of 12 percent as against 2 percent by CP.⁸¹

Using unweighted aggregates of revenue passenger miles and freight ton miles, indicators of average labor productivity suggest that CP had a 25 percent greater average labor productivity than CP by 1980 (see Table IX). The inability of CN to reduce its employment in the categories

79. *Supra* Note 28, at 199-205. CN started in 1923 with a number of insolvent carriers. The government later imposed the unprofitable Hudson Bay Railway and the Newfoundland Railway. See also, Gord Crann, "Crosbie in Line for Dreaded Hatfield Phone Call", *Toronto Star*, July 6, 1986. The latter article outlines the difficulty CN has encountered in downsizing their locomotive repair shops in New Brunswick.

80. Under its president, Robert Bandeen, CN in the mid-seventies implemented its so-called autonomy strategy by re-organizing into a number of "profit centres". They included rail, trucking, express and communication. Kent Weaver, *op. cit.*, pp. 183-184.

81. *Supra*, Note 78.

of equipment and road maintenance overhead as quickly as CP is reflected in lower labor productivities. In the case of labor directly employed in rail passenger transport, although CP was able to reduce employment at a faster rate than CN—by 46 percent—the substantially longer passenger hauls of CN meant the crown carrier enjoyed higher productivity.⁸² The more rapid reduction in manpower in the category of road freight crews achieved by CN was reflected in the crown carrier's relatively higher productivity.

Such partial indicators of labor productivity have the major limitation of being unable to account for the effects of other input levels on labors' productivity. Measures of total factor productivity (TFP), calculated by measuring the ratio of total output to total economic resources used, offer a broader index of productivity, which is defined as the change in output not accounted for by the change in input. TFP is an aggregate measure of productivity, of which an increase in efficiency gained by the exploitation of a shift in the cost function is only one component. Three other probable component sources of increase in output are technical progress, the underlying characteristics of the production process, such as scale economies, and the deviations between marginal costs and rates.

In calculating the cost function of railroads similar to CN and CP, Caves and Christensen⁸³ concluded that in the region of freight and passenger output levels produced by the two Canadian railways, the hypothesis of constant returns to scale could not be rejected. By assuming the two railways exhibited constant returns to scale, the authors implied that scale effects did not contribute to the railways' productivity, thereby inferring that measures of TFP provided them with measures of productivity that could be interpreted as being due to improvements in technical change and managerial efficiency.

Interested in the relative efficiency of the government owned as against the privately owned railway, the authors attempted to use TFP as a measure of efficiency, testing which of the two railways operating in a competitive market was the more efficient.

The authors' estimates of TFP indicated that:

although the CN had a lower level of total factor productivity at the beginning of the period it has caught up with the CP by 1967; thereafter the CN record of productivity growth was approximately equal to that of the CP.⁸⁴

82. It is considered that the costs of passenger service, as well as differing with the degree of comfort and service provided, decrease with the length of the passenger trip because terminal costs decline as the length of the trip increases.

83. There were two published studies: D. CAVES & L. CHRISTENSEN, *PRODUCTIVITY IN CANADIAN RAILWAYS—1956-75* (Canadian Transport Commission, Report No. 10-78-16 (Aug. 1978)), and, Caves & Christensen, *The Relative Efficiency of Public and Private Firms in a Competitive Environment: The Case of Canadian Railroads*, 88 J. OF POLI. ECONOMY 958-76 (1980).

84. 88 J. OF POLI. ECONOMY 958, 974, *supra* Note 83.

The authors ignored the existence of the Canadian rail cartel, contending that the railways were engaged in intramodal as well as intermodal competition:

Not only was the CN instructed to operate on a commercial basis under a management insulated from politics, it was also placed in direct competition with both the privately owned railroads and with highway and water transport.⁸⁵

Their conclusion was as follows:

public ownership is not inherently less efficient than private ownership—that the oft-noted inefficiency of government enterprises stems from their isolation from effective competition rather than their public ownership per se.⁸⁶

In a later study, Caves, Christensen, Swanson and Trethway⁸⁷ extended the data from 1975 and 1979 and, more significantly, redefined the relationship under study. They inquired into the effects on economic performance of ownership (public versus private)⁸⁸ and regulation, rather

85. *Id.*

86. *Id.*

87. Caves, Christensen, Swanson & Trethway, *Economic Performance of U.S. and Canadian Railroads: The Significance of Ownership and the Regulatory Environment*, in *MANAGING PUBLIC ENTERPRISES* 123-60 (W. T. Stanbury and F. Thompson eds. 1982).

88. Government owned, the CN could be expected to behave and perform differently than the privately owned CP. The possible differences spring from differences in ownership. In a firm managed largely by non-owners, there can be expected to be a divergence between the manager's decision and those that would maximize the welfare of the owners. Bearing only a fraction of the costs of the non-pecuniary benefits that non-owning managers will want to accrue, there will be a divergence between the managements' decisions and those that will maximize the value of the owners' firm. The divergence between the maximum value desired by the owner and that actually achieved by the non-owner manager will depend substantially on the costs incurred by the owner in monitoring the management. The owner will tend to equate marginal costs of monitoring with the additional wealth resulting from the reduction in managements' non-pecuniary benefits. The assiduous pursuit by the owners in minimizing this divergence can be expected, furthermore, to be independent of the market structure within which the firm operates. Owners of a monopoly can be expected to be just as assiduous in pursuit as owners of firms facing unregulated competition. See Jensen and Meckling, *Theory of the Firm: Managerial Behavior Agency Costs and Ownership Studies*, 3 *J. OF FINANCIAL ECON.* 305-360 (1976).

Different forms of ownership may, however, alter the assiduity and also the form and effectiveness of the monitoring. Owners of transferable assets are subjected to valuation in the market in traded shares. Subjection to such market valuation presents a standard to owners of such assets with which to gauge the performance of management. Owners can exchange their assets and change managements. The citizen, whose government acts as custodian for government enterprises, owns the assets but is unable to transfer them. Unlike owners of transferable assets, the citizen is without the standard of the market values of his assets. If he wishes to change management he has to act via the firms' custodian, his elected representative, the government. The citizen has to rely on the assiduousness of his elected representative in minimizing the accrual of non-pecuniary benefits and in implementing effective substitutes for market valuation. The ballot box presents the citizen with a means of evaluating the performance of his firms' custodians.

Government enterprises often have explicit objectives, expressed in policy statements, and implicit goals, that are not pecuniary, and which management is expected to fulfill. When there is

than competition. Regulation, according to the authors, by restricting freedom to enter or exit from specific markets or to set prices on services, prevents firms from freely competing in their product markets. The authors suggest Canadian railways had been directly competitive for over fifty years:

*These two railroads (CN and CP) are roughly equal in size, and have been direct competitors throughout most of Canada since the 1920.*⁸⁹

TFP growth rates suggested no substantial differences between CN and CP, prompting the authors to suggest that rather than ownership, regulation and in particular a lack of rate regulation has provided the Canadian railways with a flexibility in offering services and rates that had led to their higher productivities over the regulated, privately owned American railroads.

A later study by Freeman *et al.*,⁹⁰ which measured gross TFP, and hence did not infer from the measurements the relative efficiencies of the two carriers, observed (see Table X) that CN had higher growth rates than CP during the 1960's, while during the 1970's the order was reversed.⁹¹ Roy and Cofsky's gross TFP estimates found that aggregate inputs fell by an annual average of 0.6 percent for CN and 0.9 percent for CP over the period 1960-1981, while aggregate outputs grew by 3.1 percent and 3.0 percent respectively.⁹² Over the period 1970-1981, the average annual change in TFP of both railways was estimated to be 2.9 percent (see Table X).

Measurements of TFP such as these provide a number of observations. Firstly, with only two comparable carriers, there are formidable statistical difficulties involved in decomposing gross estimates of TFP. It would appear that while increased productivity was accounted for by improvements in technology, managerial efficiency and the quality of the inputs, it was not possible to ascribe the relative contribution of these factors.

a clear cut, commercial objective, the interest of owners of non-transferable assets can be expected to be as intense as owners of transferable assets in desiring to see their value maximized. Differences in the availability and effectiveness of their monitoring mechanism, however, could lead to differences between desired and attained valuations of their respected firms. The substitute for the lack of market valuation and transferability, such as accountability to the elected representative via Standing Committees, may, or may not mean, the reduction of value is less in government as compared with privately owned firms.

89. *Supra* Note 87, at 124.

90. Freeman, Oum, Trethway & Waters II, *Measuring and Identifying the Causes of the Productivity Performance of the Canadian Class I Railroads, 1936-81*, 21 LOGISTICS AND TRANSP. REV. 249-263 (1985).

91. *Id.* at 761.

92. CTC, THE PRODUCTIVITY AND COST STRUCTURE OF FIRMS WITHIN THE RAIL AND AIR TRANSPORT INDUSTRIES, TRANSPORT REVIEW, TRENDS AND SELECTED ISSUES 82 (Research Branch, Cat. TT12-5/1985 (1985)).

Consequently, TFP estimates must be considered as inadequate tests of relative carrier efficiency. Secondly, the rail cartel was able to substantially reduce inputs of labor and fuel, while the annual average growth rates of TFP showed a substantial degree of association with changes in output and consequent changes in utilization. Thirdly, most estimates of average annual growth rates of gross TFP suggest from the late 1960's CN's productivity, which had lagged behind CP's, approached that attained by CP. From the middle of the 1970's, CN's productivity equalled and in some years exceeded that of CP's. The convergence of productivities, rather than being caused by the competition between the two carriers, would more plausibly appear to be a result on the demand side of the government owned carrier practicing discriminatory, cartel pricing policies within an explicitly legally supported structure since 1967, and on the supply side of adopting profit oriented policies in the mid-1970s and successfully shedding substantial parts of its labor force and some of its uneconomical branch lines.

As a result, the Canadian railways, unlike the American railroads, were able to discriminate between markets which in turn facilitated the selective introduction of more efficient equipment which could not be justified in all markets. In contrast, the American railroads were dissuaded from introducing lower cost equipment in selective markets because regulation stipulated reduced rates across markets, including markets which did not warrant decreases.⁹³ Alternatively, collective rate making by Canadian railways, in which the lower cost carrier agreed to charge a higher rate to accommodate the higher cost carrier, could have similarly thwarted the introduction of lower rates that were reflective of efficiencies stimulated by technical improvements.

V. STAGGERS AND THE CANADIAN-U.S. RAIL CARTEL

Prior to the 1980 *Staggers Rail Act*, a congruity⁹⁴ existed in the cartel supporting regulatory systems of Canada and the United States. For the most part rail traffic between points in both countries and overhead traf-

93. According to MacAvoy and Sloss, the estimated 5-year delay in introducing unit trains on eastern railroads was in large part due to the unwillingness of the I.C.C. to permit discriminatory rates for similar services or commodities to meet certain competitive situations under existing technology. Instead, the I.C.C. required that cost savings from innovations be applied by the carriers without discrimination to all shippers using similar services. Hence, unless the savings on the unit trains were sufficient to offset revenue reductions on traffic that moved at higher rates, the innovation could not be adopted. P. MACAVOY & J. SLOSS, REGULATION OF TRANSPORT INNOVATION: THE I.C.C. AND UNIT COAL TRAINS TO THE EAST COAST 59 (1967).

94. Since 1967, however, Canadian policy unlike the U.S. had been to facilitate intermodal competition.

fic⁹⁵ were subject to international joint through rates, which in turn were filed and published. Enjoying immunity from antitrust and anticombines legislation, joint through rates were set collectively by the railways and at levels that preserved parity with the longer hauls in the domestic U.S. market. The result was an equalization of rate levels over numerous route combinations.

In practice, if an international joint through rate originated in Canada,⁹⁶ the proposal was taken to the Canadian Freight Association for approval. If supported, the rate would then go to an international rate bureau, consisting of the two Canadian railways and the American railways effected directly or indirectly by the proposed rate. American carriers would deliberate as to whether the proposed rate threatened their existing traffic, and would in turn insist that the rate had parity with their comparable domestic routes.⁹⁷ The originating carrier tended to determine the choice of the route. Southbound traffic moved over the Canadian railways' preferred routing, which was usually the longer route in Canada. Approval would be followed by a secret apportionment of the revenue among the carriers participating in the traffic. With such a "division" settled, the rate would be filed with the CTC and the Interstate Commerce Commission (ICC).

Rejection by the tariff bureau would leave the alternative of taking independent action, involving the combination of rates to and from the international border. As such action would have caused conflicts with dissenting railways, it was rarely undertaken. In general practice, the CTC granted changes in rates in the Canadian portion of the international rates whenever the ICC decided to do so on the U.S. portion of the rate.

Of the \$48.1 billion in Canadian exports to the United States in 1980, rail carried 28 percent. Fifteen percent of the \$7.1 billion in United States' exports to Canada were carried by rail.⁹⁸ Although high percentages, they had been falling, with comparable estimates indicating that in 1964, 44 percent of Canadian exports to the United States were carried by rail

95. Canadian overhead traffic is that which originates and is destined for points in the United States but part of which is carried through Canada on a Canadian carrier.

96. The rates were established with a view to competing with the trucks. In the case of northbound traffic, trucks offered stiff competition, for practically all major eastern Canadian markets were situated within trucking distance of the originating points in the United States.

97. As the joint international rate is an indivisible one, a lower rate on traffic from say Vancouver to Baltimore than from Seattle to Baltimore would cause complaints from shippers in Seattle of a loss of business in Baltimore as a result of "discrimination". Protection of shippers using their line and protection of their own revenue would cause the American rail carriers to press for parity between the international and U.S. domestic rate.

98. *External Trade Division, Exports*, Statistics Canada, Cat. No. 65-202; *Imports*, Statistics Canada, Cat. No. 65-203.

and 38 percent of Canadian imports from the United States.⁹⁹

Staggers diminished much of the regulatory support to the U.S. rail cartel. Exemption from rate regulation was removed from a substantial portion of traffic, confidential rates and rebates were permitted on much traffic, and intramodel competition was encouraged. By removing the antitrust immunity formerly enjoyed by U.S. carriers, *Staggers* exposed collectively established international joint rates to the *Sherman Act*.¹⁰⁰

The removal of rate transparency placed the American railroads at a competitive advantage over the Canadian carriers. Knowing the published rates of the Canadian carriers, American carriers were able to win traffic by striking confidential contracts and offering rebates on their long-haul route. Unable to make confidential contracts and to offer rebates, Canadian carriers saw an increasing portion of their \$870 million U.S.-Canadian rail revenue¹⁰¹ eroded as shippers moved away from the Canadian long-haul routes on to the shorter more direct routes to and from the United States.

A. Breaches in the Canadian Cartel

In response to the growing competitive pressure from American rail carriers, the Minister of Transport requested the CTC to report on the implication of *Staggers*. Commissioned in July 1983, a preliminary report of inquiry was released to the public for comment in April 1984. The inquiry officers, after reviewing the evidence, stated they were not persuaded "that changes in Canadian law are necessary or desirable."¹⁰² The Minister of Transport responded, however, by requesting a further and broader inquiry in which a panel of three from the Railway Transport Committee was appointed. A Staff Report,¹⁰³ outlining issues of concern was released in August 1984, and in the same month a series of public hearings were held, ending in October 1984.

A Final Report of the Committee dealing exclusively with international traffic was issued in December 1984.¹⁰⁴ The Committee recommended carriers be allowed to enter confidential contracts with shippers on the

99. *Trade of Canada, III, Imports 1962-64. Exports by Mode of Transport 1964*, Dominion Bureau of Statistics, Cat. No. 65-206.

100. For an outline of the implications of *Staggers* and the extra-territoriality of the Antitrust laws on collective international rate agreements, see Ellison, *Regulatory Reform in Transport: A Canadian Perspective*, 23 *TRANSP. J.* 4-19 (1984).

101. CTC, MINISTER OF TRANSPORT, INQUIRY INTO EFFECTS OF U.S. RAIL DEREGULATION, PRELIMINARY REPORT 41, Cat. TT32-5/1984/E (Sept. 1984).

102. *Supra* Note 101, at iii, 1st Printing (April 1984).

103. CTC, MINISTER OF TRANSPORT, INQUIRY INTO EFFECTS IN CANADA OF U.S. RAIL DEREGULATION, FINAL REPORT, Cat. TT32-6/1984 (Aug. 1984).

104. CTC, MINISTER OF TRANSPORT, INQUIRY INTO EFFECTS IN CANADA OF U.S. RAIL DEREGULATION, FINAL REPORT, Cat. TT32-6/1-1984 (Feb. 1985).

Canadian portion of the movement of rail traffic between Canada and the United States. Such contracts were recommended to be filed with the CTC and were to be published in summary form. The railways were not to collude in setting such contracts. It was recommended that overhead traffic, involving freight originating and destined for points within the United States but which travels via Canada, no longer be subject to tariff regulation.¹⁰⁵

Such measures, if implemented, would have limited the cartel's power over international movements but would have left it intact in the domestic market. The result would have been a dual regulatory system, much to the advantage of those shipping from the U.S. into the Canadian market and to the disadvantage of Canadian shippers competing in the domestic market. Partly in response to this possibility, the Minister of Transport requested the Committee, in February 1985, to broaden the set of issues by considering the implications of regulatory change on the domestic rail market.¹⁰⁶ The Inquiry commenced in March 1985 and reported in June 1985.

Of the 20 shipper associations giving testimony,¹⁰⁷ 15 advocated the introduction of confidential contracts, increased intrarail competition, the removal of rail collusion over rates and immunity from the anticombiners legislation.¹⁰⁸ Among the strongest advocates of domestic rail deregulation were the Canadian Chemical Producers Association, the Canadian Manufacturing Association and the Motor Vehicle Manufacturing Association. Dissent was expressed by some associations who perceived their members to be captive to a rail carrier and with no prospects of alternative, competing modes. The Coal Association of Canada expressed such concerns, as did the Council of Forest Industries of British Columbia, who also stated that while 45 of their members opposed deregulation, 62 were in favor.¹⁰⁹

Eight of the 34 individual shippers giving testimony opposed either confidential contracts, intrarail competition or both. Michelin Tires (Canada) Ltd. opposed confidential contracts because it believed it should

105. *Id.* at 33-36.

106. CTC, MINISTER OF TRANSPORT, INQUIRY INTO EFFECTS IN CANADA OF U.S. RAIL DEREGULATION, IMPLICATIONS FOR CANADIAN DOMESTIC AND IMPORT/EXPORT RAIL TRAFFIC, Final Report 1, Cat. TT32-6/3-1985 (June 1985).

107. *Supra* Note 106, at Appendix B, Cat. TT32-6/4-1986E.

108. In a random sample of 412 companies taken from CN and CP's customer listings by E. M. Ludwick and Associates for the Bureau of Competition Policy of Consumer and Corporate Affairs Canada, the following conclusion was drawn:

There is a consensus among rail users surveyed for a significant limitation on the ability of the railways to set prices collectively. In the rail users view, collective rate making should be allowed only on through interline (or joint) rates.

Supra Note 58, at 281.

109. *Id.* at 70. See also *Supra* Note 107, at 70.

know what its competitors were paying for transport.¹¹⁰ Dofasco, Canada's largest fully integrated basic steel producer, argued that if confidential contracts were permitted, CP, which controls Algoma Steel, might offer its steel subsidiary, "an attractive rate, possibly to the detriment of the other steel producers."¹¹¹

Stelco, a steel producer, in its testimony strongly supported deregulation and commented that it did not perceive that CP negotiating confidentially with Algome would be to Stelco's disadvantage.¹¹² Ontario Hydro advocated confidential contracts, and under cross-examination, revealed that Canadian coal was costing 50 percent more than American coal, a substantial portion of which was related to transport costs.¹¹³ The most forceful case for deregulation was presented by the Potash Corporation of Saskatchewan Sales Ltd., which stated that 40 percent of their delivered price was accounted for by transport costs.¹¹⁴ The Potash Corporation went beyond advocating intra-rail competition by arguing for a considerable expansion in carrier running rights. The Saskatchewan government also testified strongly in favor of rail deregulation, although representatives from the two other Prairie governments were opposed.

The Commissioners recommended the extension of confidential contracts and rebates to Canadian shippers and carriers. In contrast, while recommending that the railways should not collude over confidential contracts, they recommended collective rate making should continue to be allowed,¹¹⁵ although in a modified form. They recommended that the essence of Section 279 of the *Railway Act* should be retained, but with the "cost" portion separated from the "rates" portion and that Section 279 should not apply to allow the railways to exchange rate information.¹¹⁶ It was further recommended that the railways should remain exempt from the anticompetitive legislation.¹¹⁷ In line with their reluctance to extend intramodel competition, the Commissioners stressed the practical operational and safety consideration of extending the use of tracks to other than established railway companies, and recommended no changes to the current legislation relating to running rights.¹¹⁸

110. *Id.* at 126.

111. *Id.* at 106.

112. *Id.* at 149.

113. *Id.* at 138. Ontario Hydro revealed that it spent \$1 billion on fuels, 30 percent of its revenue, of which two-thirds was on coal. One-third of the coal came from Western Canada, the other two-thirds from the United States. *Id.* at 137.

114. *Id.* at 140.

115. *Supra* Note 106, at 43.

116. *Id.* at 42.

117. *Id.* at 43.

118. *Id.* at 40.

B. *The Removal of Legislative Support to Collusion*

The government in the meantime formulated its own response in July 1985, with the publication of a policy paper on regulatory reform. The White Paper, *Freedom to Move*,¹¹⁹ endorsed the proposals of the CTC allowing confidential contracts on domestic and international rail routes¹²⁰ but argued against retention of Section 279 of the *Railway Act*, which enables the carriers to exchange cost information and establish common rates.¹²¹ The proposed removal of the legal supports to the rail cartel were accompanied with recommendations to both encourage intramodel competition¹²² and to enhance the position of the captive shipper¹²³ (see Table XI). The Paper proposed to allow shippers captive to one rail line to have access to the lines of competing rail carriers through provisions in legislation for a joint-line rate from the traffic's origin to its destination.¹²⁴ Further increases in intramodel competition were to be encouraged by the proposal to empower the Governor in Council, where "considerations of the economy and efficiency of the rail system justifies,"¹²⁵ to impose upon the railways joint-track usage or shared running rights. The new regulatory agency would be authorized to determine appropriate compensation for the use of the right of way concerned.

Following extensive hearings held by the House of Commons Standing Committee on Transportation, the Minister of Transport tabled, in June 1986, Bill C-126. As in the White Paper, the Bill proposes to eliminate collective rate making and exemption from the anticommon law legislation, and permit rebates and confidential contracts, the latter to be filed with the proposed new National Transportation Agency (the Agency). Summaries of the non-confidential components will be published. The Bill, unlike the White Paper, proposes in the public interest to permit investigations concerning confidential contracts. Agreed changes, which the White Paper proposed to remove, will continue "primarily as a transition measure, since a number of shippers currently benefit from them."¹²⁶

Similarly, the Bill, unlike the proposal in the White Paper, retains minimum rate regulation "in the interest of fair competition between railways and between truckers and railways."¹²⁷

119. *Supra* Note 4, at 4.

120. *Id.* at 33.

121. *Id.* at 34.

122. *Id.* at 36-37.

123. *Id.* at 35.

124. *Id.* at 36.

125. *Id.*

126. *Freedom to Move: The Legislation Overview of National Transportation Legislation 1986* p. 8, Transport Canada, No. TP7746 (June 1986).

127. *Id.*

Minimum compensatory rates will be deemed to be those covering the variable cost of the movement of the traffic concerned. Appeals to the Agency, which is empowered to require the carrier to substitute a compensatory rate, is seen as a means of preventing predatory pricing.¹²⁸

The means of increasing intrarail competition largely follow the proposals contained in the White Paper. If considered to be in the public interest, the Governor in Council may request a railway to consider joint or common use of the same right of way.¹²⁹ The interswitching limit is to be increased from 4 to 18 miles (30 km). Within 30 miles (50 km) of any interchange point, a carrier will be able to exercise "terminal running rights" by seeking to pick-up, carry and deliver over the tracks of another railway.¹³⁰ Shippers captive to one carrier and at a considerable distance from an interchange point will, if they are able to arrange a deal with a second carrier, be able to apply to the Agency to establish a competitive line rate to the interchange point.¹³¹

In line with recommendations contained in the White Paper, Bill C-126 proposed a shortened process of application for abandonment of non-protected branch lines, a consideration of alternatives to abandonment, and a specification of costs and subsidies. A railway must give at least 90 days notice that it intends to apply for abandonment,¹³² and when the notice is received, shippers and other interested groups have 60 days to file an objection.¹³³ The Agency, however, may consider alternatives to abandonment, such as approving sale of the branch line to another operator,¹³⁴ or providing assistance not to the railway but to shippers, provincial governments or others to develop less costly means of transport.¹³⁵ Alternatively, the Agency may recommend to the Minister to order one railway to interconnect its branch line with another railway.¹³⁶ If such alternatives are deemed unsuitable, but it is decided the line has economic potential, then it will be retained with a subsidy for three years and will then be reviewed again.¹³⁷ In such calculations, branch line costs have been defined to include only those costs directly incurred by the railway in operating the line. If the line is deemed not to have economic potential, the line will be abandoned within six months after the

128. *Supra* Note 5, at § 113.

129. *Id.* at § 148(4).

130. *Id.* at § 149(1).

131. *Id.* at § 134(2).

132. *Id.* at § 160(1).

133. *Id.* at § 161.

134. *Id.* at § 177.

135. *Id.* at § 175.

136. *Id.* at § 173.

137. *Id.* at § 171(1).

application.¹³⁸

VI. RAILWAY COMPETITION NOT CARRIER COMPETITION

The proposed legislation would appear to reverse the protectiveness of much of the regulation and to transform the role of the regulatory Agency. By removing the exchange of cost information and the setting of common rates, the 1986 *National Transportation Act* withdraws the legislative protection afforded the fifty year old rail cartel. The Agency, with its proposed direction over running rights, joint-track usage and joint-rates, is empowered to facilitate rather than limit intramodal competition. While empowering the Agency to establish competitive joint-rates for the captive shipper, the legislation suggests that intra-rail carriage will be insufficient to provide competitive rates. The Agency can be expected to be a more stringent regulator of rates than its predecessor, the CTC, by regulating rates to the captive shipper and establishing minimum, compensatory rates.

Despite the expected role of the Agency in facilitating intra-rail competition for captive shippers, the incidence of such competition can largely be anticipated in markets where shippers perceive benefits from intrarail competition. In markets where rail competition is possible, such as is available to urbanized manufacturing plants in Eastern Canada, rates can be expected to move downwards from the cartel rate towards the costs of the lower cost carrier. There would, however, appear to be little incentive for the railways to initiate direct, intra-rail competition. Although carriers are unable to engage in collusion, the legislation, by permitting confidential contracts and rebates, facilitates individual carrier rather than cartel rate discrimination. The overall result of some markets in which rail competition will be stimulated by shippers and in others in which the railways will engage in individual rate discrimination will be a rate structure devoid of the vestiges of rate parity that existed under the collective, blanket rate structures. Instead, it will be characterized by differential rates reflecting relative advantages of shippers and regions competing in an increasingly competitive, continental market.

Indeed, there are doubts whether the proposed measures to release intramodal rail competition will sustain increasing carrier competition. Although shippers' choices could be expanded by extending running rights, thereby providing alternative routing and increasing the competition for carriage, the industry would still consist of a duopoly, with the two railways each possessing their own track along with exclusive rights to operate.

The potential malfunction of competition within such a market struc-

138. *Id.* at § 165(1).

ture springs in part from the sunk costs incurred by the railways and some shippers. The railways' sunk costs, such as grading of the land on which the track rests, along with the specificity and longevity of much of the capital embodied in the track, present barriers to entry. The sunk costs of the shipper makes them captive to a single carrier. Possessing exclusive right of carriage over their track, the railways are able to limit competition in carriage. With restricted entry and exit of suppliers and shippers, such a market structure is far from contestable. Furthermore, there is uncertainty as to the resulting outcome of competition between just two suppliers of rail services, one of which is government owned and financed.

Such uncertainty, however, can be expected to be negligible because the proposed policy essentially involves removing the legal support to the rail cartel without substantially increasing carrier competition. The proposed measures to increase carrier competition are to extend running rights and joint track usage. They will not be extensively granted, for while recognizing the necessity of such practices "as appear just or desirable to the Agency, having regard to the public interest,"¹³⁹ the Bill states the Agency will "report on whether significant efficiency and cost savings would result from such joint or common use."¹⁴⁰

It is uncertain who will request joint running rights and joint track usage. It is difficult to envisage the Agency extending the running rights if there are no requests from shippers or the railways. The most probable source of requests will come from shippers who perceive they can gain from striking a confidential contract. The railways can be expected to adhere to their markets, attempting to retain their shares, rather than invading their rival's market by offering shippers attractive, confidential rebates and requesting running rights. An active market in running rights could only be expected to develop if there were a substantial number of competing carriers operating rolling stock for-hire or for private shipments.

VII. RECOMMENDATIONS

The proposed legislation would appear to remove the legal incongruity between Canadian and American railway practice while only marginally increasing rail competition. Consequently, the proposals will not satisfy one of the Bill's prime objectives of encouraging competition "both within and among the various modes of transportation."¹⁴¹ In order to introduce effective and sustainable intra-modal rail competition, it would appear essential that new carriers be allowed to enter and compete for

139. *Id.* at § 147(2).

140. *Id.* at § 147(5).

141. *Id.* at § 3(1).

traffic. New carriers, including companies specializing in aspects of the carriage business, such as container trains, should be encouraged to enter the industry. Similarly large shippers, such as those in the potash, hydro and coal industries, should be encouraged to enter private carriage by owning or leasing rolling stock and using the track owned by the railways.

Such competition in carriage could be encouraged by facilitating the extension of running rights but not just where "significant efficiency and cost savings occur."¹⁴² Similarly, operating authority and running rights should be readily granted by the new regulatory authority to new carriers, including private and for-hire carriers. As a result of such changes, the rail shipper would have some of the advantages enjoyed by those shipping by truck. The shipper would be able to provide its own freight cars and could even provide an entire train with cars and locomotives. Service by two railways would give the shipper alternatives, but each railway would still control service over its respective tracks.

Competition in rail carriage could be more substantially enhanced by separating the railway's ownership of the infrastructure from that of carriage.

Separation of track from carriage would make the rail mode similar to the operations in the highway, water and air transport sectors. The track company would own all tracks except tracks and yards owned by shippers and serving shipper-owned facilities. All carriers would be allowed to use the track, just as carriers share use of the fixed ways in other modes. The track company would control all train movements over its network, applying a common set of rules to all carriers. The company would assume the fixed track costs and would have the incentive to stimulate economies of traffic concentration and track coordination, converting track fixed costs into track tolls for the carrier. Joint use of the track would free most of the captive shippers by removing the rail carrier monopoly. The ensuing carrier competition would remove the vestiges of discrimination between commodities, shippers and regions, and instead the resulting rate structure would more accurately reflect the cost of service.

Underlying the transformation of an industry into two separate entities is the assumption that the two aspects of the railway can be operated so as to maintain it at an overall level of efficiency at least equal to the existing method of operation. Defenders of a method of operation founded in Victorian England suggest that a separation of track and carriage would lead to problems. Unclear signals, it is argued, would be sent concerning track construction and maintenance, and that there would be considera-

142. *Id.* at § 147(5).

ble cost in introducing train control systems. The numerous advocates of separation counter by suggesting that the techniques facilitating smooth operation are available, just as they are in the separated highway, air and water modes in which the agencies maintain the fixed way, provide traffic control, set operating rules, and license individuals to operate vehicles.

In providing traffic control for many users, the track company could employ methods used in managing the airways. Similarly, standardized licensing procedures could be employed for locomotive engineers, as is used for aviation licenses, while highway sign practices could serve as a guide for rail sign applications. Enforcement by track police could be considered. Maintenance would be executed by departments similar to the engineering and maintenance of way departments of existing railway companies. Toll changes would have to be sufficient to provide the necessary rate of return while reflecting the costs of individual roadway segments and types of train service. Examination of trackage right agreements in North America suggest they are made without any major operational or managerial problems, further suggesting that the railways engage in such contracts at their own convenience and oppose them in principle when they threaten to open up competition.

A number of organizational arrangements could be considered for the separated track operation. A privately-owned track could be considered, or alternatively, a track-owned and operated by a government agency. While a privately-owned track would be expected to operate efficiently, a government-owned track would allow retention of the symbol of the unifying "national spine." As more than two-thirds of the Canadian rail track network is already owned and operated by the government-owned Canadian National, public ownership of most of the rail track need not involve the nationalization of privately-owned track.

Having initiated increased carrier competition by extending running rights, it is recommended that a further step towards increasing carrier competition be undertaken by transforming CN from an integrated railway company into a government track company serving an increasingly diverse, multi-firm rail carriage industry.

CN's infrastructure in Canada would be transferred to the new crown corporation and would become essentially a commercial, privately-owned rail carrier. In order to most effectively fulfill this specialized role, CN would undertake to rationalize its holdings in activities unrelated to rail carriage.

The establishing statute would state the commercial goals of the new crown corporation and instruct the corporation to adjust its network to meet the changing market demands in order to earn adequate income, to remain economically viable and to attract and generate the required capital to meet future requirements. In adjusting its network, the crown track

corporation would have to be able to effectively expand and contract its track so as to compete effectively with other modes and other railways, particularly U.S. railways. There should be no exclusion, however, of other organizations entering as track builders and owners.

In transferring track to the new crown track corporation, consideration would have to be given to whether the uneconomical branch lines should be included, and if they were, how their costs should be covered. Direct subsidies from government authorities could be considered along with cross-subsidies generated within the crown track corporation. An alternative would be to consider encouraging institutional arrangements of ownership and operation of short lines that have proved successful in the United States. Two such institutional arrangements are ownership of the right-of-way and trackage by a municipality (or special district) or incorporation of the short lines as a cooperative of shippers. The owning entity would in turn lease the line to a private short-line operator. Government subsidies, if needed, could then be channeled into maintaining the right-of-way and track rather than subsidizing operating losses.

The increasing carrier competition can be seen in stages, the first being where new carriers, who will probably be large shippers, engage in private carriage over CN and CP's track networks. During this first stage it will be important for the new regulatory agency to facilitate access of new carriers on to both railway networks, and in order to protect CP's captive shippers, to encourage CP to grant running rights to other carriers. The second stage would be where the newly founded crown track corporation engages in contracting with the full range of carriers, including contract, private and common carriers. Many of the contract carriers can be expected to operate unit trains linking mines and power plants and transporting hazardous products. Private carriage will develop where it suits the shipper's needs and will probably attract a considerable amount of traffic currently moving in expensive truck operations.

Common carriage can be expected to approximate contract carriage, with the difference that the common carriers could provide it without a contract on an "as-needed" basis to any shipper. When used with a short train of a few cars, the common carrier in effect resembles an irregular route trucking company. Some common carriage could be financially unattractive to the carriers, such that during the transitional phase, there could be a sharp contraction in the supply, causing hardship to the affected shippers and communities. In order to ease such transitory adjustment, it is recommended that rather than requesting CN and CP to sustain common carriage out of cross-subsidies, that the affected shippers and communities negotiate for a specified period subsidies to sustain common carrier services. Finally there is the issue raised by CN's ownership of railways in the United States. The problem is that current

American regulation, in contrast to those proposed here, consolidates the exclusivity of carriage by the railways.

In the short run, it would appear prudent for CN's railways in the United States to operate as integrated operations. In order to further the trade in rail services, however, it is recommended that the Canadian government undertake bilateral discussions with officials in the United States for the purpose of considering regulatory changes that would permit the separation of track from carriage of American railroads, thereby permitting reciprocal rights for track and carrier companies in the two countries.

Table I
Regulatory Support to and Constraints on Rail Cartelization

Activity	Regulation	Date	Description
<u>Interswitching</u>	Order No. 4988	1908	Interswitching limit up to four miles from the point of the interchange. Rates established
	Order 252	1918	Order provided for and compelled the service to be given.
<u>Pooling</u>	Railway Act C. 37, S. 316	1906	Prohibition of physical and money pools.
<u>Exchange of Information and Collective Pricing</u>	Canadian National- Canadian Pacific Act S.C. 1932.33.C.33 16.1	1932	"Agree. . .for purposes of effecting economies and providing for more remunerative operations".
	Railway Act 279	1967	"Railway companies shall exchange such information with respect to costs as may be required under this Act and may agree upon and charge common rates under and in accordance with regulations or orders made by the Commission."
	Transport Act Part IV	1938	Railways authorized to make contracts of agreed charges with shippers. Board's approval could not be given unless all railways joined in making the agreed charge.
	Transport Act Section 32 (2)	1967	No agreement for an agreed charge for the transport by rail from or to a competitive point, or between competitive points, on the lines of two or more carriers by rail shall be made unless the competing carriers by rail consent thereto in writing or join in making it.
	Section 32 (9)		Where an agreement for an agreed charge has been made between a carrier and a shipper, any other shipper may with the consent of the carrier become a party to the agreement.
<u>Rates: Authorization</u>	Railway Act S.325 (5)	1903	Board had power to "fix, determine and enforce just and reasonable tolls".
	S.325 (1)		Board had power to disallow the tariff, order a substitute tariff or prescribe other tolls.
	Railway Act	1967	The Commission's general power to disallow, suspend or prescribe tolls was written out of the Act.
<u>Equality</u>	Railway Act Rs.1927, C170 S.314	1903	Equality as to tolls and facilities.
	Railway Act S.336	1952	The national freight rates policy was to subject the railways to charge, in respect of all freight traffic of the same description, tolls to all persons at the same rate.
	National Transporta- tion Act S.3(a)	1967	The National Transport policy was enacted in place of the concept of equality of tolls, premised on "the ability of any mode of transport to compete freely with any other mode of transport".

Table I (cont'd)

Activity	Regulation	Date	Description
Filing	Railway Act S.330, 331	1903	Standard freight tariffs were to be filed with and subject to the approval of the Board. Once approved, they were required to be published 'in at least two consecutive weekly issues of the Canada Gazette'. Special freight tariffs had a statutory notice period of 30 days.
Rebates and Confidential Contracts	Railway Act 401	1906	Prohibition of rebates and confidential contracts.
Maximum and Minimum Rates	Railway Act S.276, S.277, 278	1967	'All freight rates shall be compensatory' Commission given jurisdiction to disallow non-compensatory rates. The upper limit established by the captive shipper provision: such a shipper could apply to the Commission to have the probable range of a fixed rate established.
Discrimination	Railway Act RS.C.1952.C.234 Section 317, 319 (3), 320 (1), 332-24, 328 National Transportation Act Section 23	1903 1967	Prohibition of 'undue and unreasonable discrimination'. The Commission may investigate where a case has been made concerning an Act, omission or rate that has prejudicially affected the public interest.

Table II
Regulatory Rates Applied to Rail Traffic

Date	Statute	Description
1897	<u>Crows' Nest Pass Act and Agreement</u> , between (Canadian Pacific Railway and the Government of Canada)	In exchange for a subsidy to build a rail line from Lethbridge, Alberta through the Crow Nest Pass to Nelson, B.C., the railway agreed to reduce eastbound rates on grain and flour to the head of navigation (the Lakehead) and westbound rates on the "settlers effects".
1901	Manitoba Agreement	In return for financial and other assistance from the Manitoba government, the Canadian Northern railway built a line from Winnipeg to Thunder Bay. The Agreement provided for the reduction in grain rates below that provided under the Crows' Nest and a 15 per cent reduction on westward commodities.
1955		The Manitoba Agreement ended with the introduction of the equalized class rate scale in 1955.
1925	<u>Railway Act</u> Amendment	Special rates for settlers' effects ended, but the Railway Act incorporated the principal elements of the <u>CNP Act</u> including a continuation of the special rates for eastbound grain and flour on all present and future railways and an expansion of the number of shipping points from which the rates applied.
1927-61		The Crow rate extended to: grain and flour shipped to the west coast (1927); milling, distilling and brewing industries, as well as certain feed grain products (1927-45); grain shipped to Churchill, Manitoba (1931). By the 1980's 50 commodities moved at the statutory rate.
1983	<u>Western Grain Transportation Act</u>	The Crow Benefit (the gross railway revenue shortfall), defined as the additional revenue the railways would need in order to cover variable costs of operation as well as an (arbitrary) contribution to overhead costs estimated at \$651.6 on a base year crop of 31.1 million tonnes. Under the Act the government agreed to: <ol style="list-style-type: none"> 1. Pay the entire crow benefit, beginning with the 1983-84 crop year, to the railways. 2. A distance-related base rate scale established for the movement of grain by rail. The annual rate scale will be the base rate adjusted for railway price indices established by the CTC. 3. Shippers responsible for the first three percentage points of any increase in annual railway costs until 1985-86, when their share rises to the first six points, with the government in each instance making up the remainder.
1927	<u>Maritime Freight Rates Act</u>	Reduction of 20 per cent in tolls within the maritime Provinces. The 20 per cent was the measure of any disability resulting from "national, imperial and strategic considerations," and this differential was to be applied to rates within the "selected territory" and to the portion of rates applicable within the select territory on traffic proceeding out of the select territory.
1957		The benefit on westbound interterritorial traffic was increased to 30 per cent on the portion of the haul within the selected territory.

Table II (cont'd)

Date	Statute	Description
1969	<u>The Atlantic Region Freight Assistance Act</u>	Empowered the Governor in Council to "vary or remove the reduction in tariffs for the preferred movement of traffic wholly within the selected territory". In 1974, subsidies increased to 50 percent on selected westbound commodities.
1951	<u>Railway Act</u> Amendment "The Bridge Subsidy"	Subsidy paid on traffic moving at other than competitive or agreed rates between Sudbury and Thunder Bay, Ontario. Under the provision of the subsidy, rates on traffic passing over the Bridge Territory were to be reduced by the amount of a grant (\$7 million) paid to the railways to compensate them for the costs of maintenance of the allegedly unproductive sections of their transcontinental routes.
1967	<u>Freight Rate Reduction Act</u>	The bridge subsidy was abolished. Freight rates were "rolled back" and in return the railways were compensated. Between 1959 and 1967, over \$500 million paid by the government to cover the shortfall in revenue due to the rate freeze.
1959	<u>Railway Act</u> Section 272 "At-and-East" Rates	Rates applied to export grain and flour transported by ship from the Lakehead to Georgia Bay ports and from there by train to Montreal, Halifax and other east coast ports. Prior to 1967 the Board set these rates to stop diversion of traffic through Buffalo. In 1967, the rates were frozen by a federal statute at the 1960 level. The difference between the compensatory freight rate, as determined by the CTC and the actual rate frozen at the 1960 level is covered by a federal subsidy.

Table III
Passenger Trains: Abandonment and Subsidies, 1968-77

Year	Abandonment decisions		Subsidies ¹		Ratio of subsidies to passenger revenue ²		Passenger Train miles 1968 = 100		Subsidies ³ per passenger train mile		Passenger ⁴ revenue per passenger mile		Subsidies ⁵ per passenger mile	
	Issued	Permitted	CN	CP	CN	CP	CN	CP	CN	CP	CN	CP	CN	CP
1977	7	8	201,572	48,301	1.65	2.11	58	71	1.36	1.36	5.10	6.27	15.30	19.43
1976	2	1	191,353	44,835	1.37	1.96	59	72	1.28	0.86	4.59	6.24	13.99	18.22
1975	2	2	163,989	39,432	1.29	1.75	45	72	1.41	0.75	4.44	5.14	12.29	13.67
1974	1	1	130,384	31,468	1.12	1.37	59	72	0.87	0.21	4.39	4.22	9.74	8.98
1973	9	—	112,316	27,214	1.33	1.79	52	67	0.85	0.29	3.38	3.86	9.43	9.14
1972	41	—	95,398	86,479	0.92	1.01	56	77	0.66	0.44	3.19	3.89	6.18	5.91
1971	10	4	60,542	24,926	0.62	0.93	60	79	0.39	1.53	2.78	3.28	3.64	5.51
1970	9	6	—	26,332	—	0.97	70	86	—	0.43	2.71	2.89	—	5.11
1969	—	—	—	—	—	—	76	97	—	—	2.65	2.83	—	—
1968	1	1	—	—	—	—	100	100	—	—	2.45	2.72	—	—

1 Subsidies are those issued under Section 261 of the Railway Act plus the 20 per cent borne by the railway carriers.
 2 Subsidies refer to those issued under Section 261 of the Railway Act; passenger revenue includes passenger revenue, baggage, sleeping and parlour car revenue, mail and express revenue.
 3 Subsidies refer to those issued under Section 261 of the Railway Act.
 4 Passenger revenue refer only to passenger revenue, and excludes the items of baggage, sleeping and parlour car revenue, mail and express revenue.
 5 Subsidies are those issued under Section 261 of the Railway Act plus the 20 per cent borne by the railway carriers.
 Source Rail Economic Branch, CTC; CTC Annual Reports; Railway Transport, Part II, Financial Statistics, S.C. Catalogue #52-208 annual. Canadian National Railways and Canadian Pacific Ltd., Statistics Canada, Catalogue 52-213 annual.

Table IV
Federal Government Assistance To The Railways: Operating Subsidies Under The Railway Act.
\$ million

Year	Section 261			Section 258			Section 256			Section 413			Section 272			Totals ¹	
	Passenger train deficits			Guaranteed branch lines			Unprotected branch lines			"Normal" payments			Eastern rates			CN	CP
	CN	CP	Total	CN	CP	Total	CN	CP	Total	CN	CP	Total	CN	CP	Total		
1967	—	—	—	—	—	—	62.427	43.534	105.961	0.738	0.902	1.640	63.166	44.436	107.602	—	—
1968	—	—	—	—	—	—	54.967	38.261	93.228	0.160	0.519	0.679	55.127	38.781	93.908	—	—
1969	—	—	—	—	—	—	46.591	32.404	78.995	0.497	0.721	1.218	47.088	33.125	80.213	—	—
1970	—	21.944	21.944	—	—	—	38.291	—	—	2.892	2.902	5.794	39.049	38.588	77.637	—	—
1971	50.452	20.772	71.224	12.592	15.068	27.660	—	—	—	4.154	4.421	8.575	107.597	41.913	149.510	—	—
1972	79.499	20.066	99.565	15.068	21.073	36.141	1.467	1.976	3.443	3.573	3.281	6.854	127.511	46.571	174.082	—	—
1973	93.597	22.679	116.276	18.686	27.165	45.851	2.870	1.857	4.727	4.480	3.953	8.413	163.099	62.048	225.147	—	—
1974	108.654	26.224	134.878	49.738	31.545	81.283	3.174	1.923	5.100	8.003	5.664	13.667	196.210	83.069	279.279	—	—
1975	136.658	32.860	169.518	51.547	43.573	95.120	0.245	0.324	0.569	13.319	10.250	23.569	228.911	94.037	322.948	—	—
1976	159.353	37.363	196.716	55.823	45.501	101.324	—	0.970	0.970	16.597	11.153	27.750	233.024	110.840	343.864	—	—
1977	167.572	40.251	207.823	46.432	56.133	102.545	0.414	0.922	1.336	19.189	9.994	29.183	270.923	114.892	385.815	—	—
1978	176.250	37.359	213.609	63.419	59.498	122.917	12.063	8.039	20.102	20.404	14.324	34.728	135.555	105.565	241.120	—	—
1979	348.374	4.893	353.267	65.625	76.519	142.144	15.510	9.827	25.337	—	—	—	—	—	—	—	—
1980	2.005	0.196	2.201	95.867	99.067	194.934	16.084	12.993	29.077	—	—	—	—	—	—	—	—

¹ The figures in the total column are the summation of the payments to the dollar, while the figures in the section columns are to the nearest one thousand dollars.
Source Rail Economic Analysis Branch, CTC.

Table V
Rates of Return for CN and CP: 1967-1980

Year	Earnings ¹ (,000 \$ current)		Capital ² (,000 \$ current)		Rates of return (Per cent)	
	CN	CP	CN	CP	CN	CP
1967	140,526	149,940	4,177,878	2,453,158	3.3	6.1
1968	131,944	188,115	4,271,584	2,438,354	3.0	7.7
1969	178,287	145,946	4,424,292	2,522,480	4.0	5.7
1970	191,450	157,622	4,493,113	2,559,105	4.2	6.1
1971	191,635	165,497	4,595,199	2,598,666	4.1	6.3
1972	212,600	186,205	4,542,050	2,646,708	4.6	7.0
1973	209,273	196,365	4,663,713	2,720,122	4.4	7.2
1974	227,628	221,382	4,863,549	2,740,567	4.6	8.0
1975	43,445	224,023	5,176,805	2,920,815	0.8	7.6
1976	317,928	274,653	5,443,816	3,014,045	5.8	9.1
1977	383,217	293,405	5,760,324	3,108,546	6.6	9.4
1978	389,993	319,125	5,903,157	3,206,708	6.6	9.9
1979	520,951	391,889	6,240,229	3,372,399	8.3	11.6
1980	521,229	445,650	6,597,436	3,599,030	7.9	12.3

1 Earnings consist of:

Net railway operating income.

Income taxes.

+Income from lease of road and equipment minus rent paid for leased road and equipment.

+Road property, equipment and other equipment and machinery depreciation.

2 Capital consists of:

+Current assets minus current liabilities.

+Total road and equipment property.

+Improvements on leased property.

Source Statistics Canada, Railway Transport, Part II, Financial Statistics, Cat. No. 52-208 Annual.

Table VI
Average Transport Charges in Goods Producing Industries 1981

INDUSTRY GROUP	DOMESTIC SALES Transport charges from producers to purchasers (delivery transport cost) as a percentage of output valued in producers prices ⁴		EXPORTS Transport charges from producers to the Canadian border as a percentage of output valued in producers prices ⁴	
	All transport modes ¹	Rail	All transport modes ¹	Rail
Primary Industries				
Agriculture	3.1	0.6	6.4	2.7
Forestry	4.5	1.1	7.6	2.3
Fishing, Hunting, Trapping	2.3	1.9	3.0	0.2
Gold Mines	1.4	2.3	2.7	0.1
Uranium Mines	0.7	0.08	1.2	0.1
Iron Mines	10.8	5.3	12.8	6.4
Base Metal & Other Metal Mines	3.0	1.9	5.8	3.6
Coal Mines	9.8	7.0	53.0	38.1
Petroleum and Gas Wells	0.3	1.2	3.8	3.2
Asbestos Mines	10.3	2.4	9.0	1.5
Gypsum Mines	51.1	31.8	39.3	24.5
Salt Mines	38.6	11.6	17.0	5.1
Other Non-metal Mines	18.1	8.1	20.7	12.2
Quarries & Sand Pits	26.4	7.3	23.7	7.2
Manufacturing Industries²				
Fish Products Industry	3.9	0.5	1.2	0.1
Fruit and Vegetables Processing	4.1	1.8	3.6	2.0
Flour and Breakfast Cereals	4.3	2.2	3.2	1.6
Distilleries	3.9	0.4	6.2	0.7
Fiber Preparing Mills	4.0	0.3	10.3	2.6
Cordage and Twine	6.2	0.7	6.5	0.4
Sawmills	10.9	5.8	11.5	4.1
Veneer and Plywood	7.6	4.4	5.2	2.9
Wooden Box	4.5	0.3	7.6	2.1
Mis. Wood Industry	6.3	1.2	7.1	1.8
Pulp and Paper	5.2	1.9	5.3	1.9
Asphalt and Related Products	5.8	1.9	4.7	1.6
Aluminium Smelting and Ref. Aluminium Rolling and Extruding	5.2	1.4	2.9	0.5
Cement	11.8	5.4	16.2	7.4
Lime	14.7	4.3	16.8	4.9
Concrete	9.8	1.2	5.2	0.7
Clay Products	6.2	2.4	3.6	1.4
Stone Products	7.3	3.7	8.0	6.2
Other Non-metallic Products	9.1	0.9	7.6	2.0
Other Petrol and Coal Products	10.1	3.5	8.1	2.9
Mixed Fertilizers	8.4	5.1	21.1	12.7
Average of Total ³	3.5	1.1	4.1	1.4

1 Private trucking is not included.

2 Only manufacturing industries with a substantial transport input have been displayed.

3 The average is for all 165 of the 'M' level industries rather than the smaller number included in the table.

4 Producers' prices cover the producers' costs of production.

Source Statistics Canada. Input-output models.

Table VII
 Use of Railway Track and Rolling Stock by CN and CP

	Output: revenue ton miles CN & CP		Track mileage		Revenue freight ton miles per miles of track operated		Freight and passenger train miles per track mileage		Average freight car capacity (tons)		Revenue ton miles per freight car		Load factor: average car load (ton miles per loaded car mile) ¹		Utilization revenue fr carried per capacity		
	Index (1945-50=100)		Ratio		(millions)		('000)		Ratio		('000 ton miles)		Ratio		CN & C		
	'000	CN to CP	CN	CP	CN	CP	CN	CP	CN to CP	CN to CP	CN	CP	CN to CP	CN to CP	Ratio	CN	C
1980	139,342	1.38	37,826	3.64	3.74	3.68	0.97	—	0.98	880	882	881	0.99	85.91	20.90		
1979	137,609	1.33	37,996	3.52	3.76	3.62	0.93	—	1.00	848	884	863	0.95	87.91	20.75		
1978	131,236	1.31	39,417	3.19	3.53	3.32	0.90	2.06	0.97	64.11	791	843	0.93	85.15	20.79		
1977	124,605	1.34	41,114	2.87	3.26	3.03	0.88	1.97	0.97	63.76	743	763	0.97	85.35	19.88		
1976	118,790	1.37	41,373	2.75	3.05	2.87	0.90	1.98	0.99	63.05	677	701	0.96	83.12	18.57		
1975	117,512	1.29	41,495	2.65	3.10	2.83	0.85	1.78	0.98	61.80	652	711	0.91	83.23	18.34		
1974	120,282	1.28	41,713	2.69	3.17	2.88	0.84	1.96	1.00	60.50	683	716	0.95	81.15	20.27		
1973	112,527	1.19	41,743	2.43	3.08	2.69	0.78	1.83	0.98	59.65	631	696	0.90	81.23	20.21		
1972	110,957	1.25	41,752	2.45	2.96	2.65	0.81	1.91	0.97	58.60	640	655	0.97	79.26	20.03		
1971	102,867	1.25	41,878	2.26	2.74	2.45	0.82	1.86	0.96	57.88	591	595	0.99	86.09	18.76		
1970	93,952	1.23	41,815	2.06	2.52	2.24	0.81	1.89	0.96	57.17	533	533	1.00	79.55	18.36		
1969	83,640	1.59	41,231	1.93	2.17	2.02	0.88	1.94	0.97	55.55	493	456	1.08	76.09	17.42		
1968	80,014	1.31	41,152	1.85	2.07	1.94	0.89	2.04	0.96	54.90	479	427	1.12	77.37	17.66		
Annual averages																	
1958-67	67,028	1.22	41,592	1.49	1.78	1.61	0.83	2.23	1.00	51.81	386	377	382	70.10	16.45		
1950-58	60,113	1.20	41,592	1.36	1.59	1.44	0.85	2.74	0.98	—	—	—	—	—	—		
1945-50	52,330	1.13	40,867	1.18	1.43	1.28	0.82	3.02	0.98	—	—	—	—	—	—		

1 From 1979 onwards passenger train miles were produced by VIA Rail.
 2 The load factor is measured by taking the average car load and dividing by the average freight car capacity. Note that while the latter is for CN and CP, the numerator is a measure of all C railways.
 Source Canadian National Railways, 1923-71, S.D. Catalogue No. 52-201; Canadian Pacific Ltd., 1923-71, S.C. Catalogue No. 52-202; Canadian National Railways and Canadian Pacific Ltd., 1971-75, S.C. Catalogue No. 52-213; Railway Transport, Part III, Equipment, track and fuel statistics, Catalogue No. 52-209; Railway Transport, Part I, Comparative Summary, S.C. Catalogue No. 52

Table VIII
Employment and Compensation in CN and CP

Year	Average haul ratio CN/CP		Labor Compensation				Employment	
	Freight (1)	Passenger (1)	Percentage of total expenses		Average salaries as ratio of wages in manufacturing industries		Ratio of employment to the base, average 1960-67 = 100	
			CN	CP	CN	CP	CN	CP
1980	1.02	0.75	59.4	44.6	1.21	1.19	0.75	0.56
1979	1.00	4.23	63.2	48.9	1.20	1.20	0.78	0.59
1978	0.96	1.97	63.6	49.7	1.16	1.18	0.80	0.60
1977	0.99	2.14	66.2	50.6	1.18	1.18	0.80	0.60
1976	1.01	2.53	66.8	51.3	1.20	1.20	0.82	0.59
1975	1.07	2.11	67.2	55.3	1.20	1.23	0.86	0.63
1974	0.99	1.59	70.3	56.6	1.25	1.25	0.88	0.68
1973	0.93	2.09	70.4	56.7	1.25	1.24	0.81	0.65
1972	0.94	1.92	72.1	61.0	1.20	1.20	0.81	0.71
1971	0.95	1.73	73.1	61.4	1.20	1.20	0.84	0.73
1970	0.94	1.60	74.0	61.8	1.20	1.19	0.84	0.75
1969	0.92	1.39	72.0	62.4	1.21	1.20	0.87	0.77
1968	0.94	1.39	71.8	62.0	1.22	1.21	0.88	0.79
1967	0.96	1.33	64.0	62.0	1.21	1.20	0.96	0.87

1 Revenue freight ton miles and revenue passenger ton miles.

2 Total compensation as percentage of total expenses.

3 Average salaries and wages per hour as a ratio of all manufacturing wages and salaries per hour. The figures for the railways excludes other operations, including express, highway transport, telecommunications and outside operations.

4 Employment for the period 1960-66 taken as the base, equal to 1.00.

Sources
Railway Transport, Part VI, Employment Statistics, Statistics Canada, Catalogue No. 52-212 Annual.
Canadian Pacific Limited, Statistics Canada, Catalogue No. 52-202 Annual.
Canadian National Railways, Statistics Canada, Catalogue No. 52-201 Annual.
Canadian Statistical Review No. 11-003.

Table IX
Indicators of Average Labor Productivity

Year	Ratio CN to CP								
	Ratio aggregate output to total labour (1960-67 = 100) CN (1)	CP (1)	CN & CP	Aggregate output to total labour (2)	Equipment maintenance (3)	Road maintenance (4)	General (5)	Direct rail passenger transport (6)	Road freight crews (7)
1980	2.13	3.38	2.50	0.76	0.87	0.72	0.89	3.42	1.24
1979	1.98	3.18	2.35	0.76	0.87	0.74	0.85	2.72	1.16
1978	1.86	3.04	2.22	0.75	0.92	0.74	0.76	1.40	1.11
1977	1.73	2.86	2.08	0.74	0.98	0.74	0.73	1.60	1.11
1976	1.67	2.72	2.00	0.74	0.98	0.73	0.73	1.69	1.12
1975	1.50	2.50	1.84	0.70	0.87	0.71	0.67	1.43	1.07
1974	1.52	2.50	1.84	0.74	0.97	0.71	0.67	1.26	1.06
1973	1.50	2.52	1.82	0.73	0.90	0.78	0.65	1.78	1.03
1972	1.52	2.22	1.75	0.83	0.90	0.76	0.67	1.61	1.04
1971	1.36	2.00	1.57	0.83	0.91	0.78	0.69	1.92	1.06
1970	1.24	1.80	1.42	0.84	0.92	0.79	0.75	1.88	1.00
1969	1.13	1.50	1.24	0.84	1.00	0.75	0.85	1.66	1.07
1968	1.06	1.42	1.17	0.91	1.00	0.77	0.87	1.70	1.11
1967	0.96	1.32	1.08	0.89	0.95	0.75	0.84	2.00	1.07

1 Output is the unweighted sum of revenue ton miles and revenue passenger miles, and labor refers to total labor employed by the railways, excluding express, highway transport, telecommunications and outside operations. The base period is 1960-67, and subsequent years are expressed as a ratio of this base period.
 2 Taken from column one and two.
 3 Equipment Maintenance includes categories 27 to 41 in Statistics Canada, Catalogue No. 52-212. Output is measured by the unweighted aggregate of revenue ton miles and revenue passenger miles.
 4 Road maintenance includes categories 11 to 26 in Statistics Canada, Catalogue No. 52-212. Output is measured by total miles of track operated.
 5 General refers approximately to those employed in administration, covering categories 1 to 10 in Statistics Canada, Catalogue No. 52-212. Output is measured as the unweighted sum of revenue ton miles and revenue passenger miles.
 6 Direct rail passenger transport includes those directly employed in producing passenger services. Output is measured as revenue passenger miles. Categories included in producing such services are: road passenger conductors, brakemen and baggemen, engineers and motormen, sleeping and parlour car personnel, dining car personnel and coach cleaners, baggage, parcel room and station attendants, restaurant personnel, news agents, motor vehicle, sleeping and parlour car personnel, dining car personnel and coach cleaners, baggage, parcel room and station attendants, restaurant personnel, news agents, motor vehicle mechanics and helpers and revenue motor vehicle drivers.
 7 The output of road freight crews is measured by revenue ton miles and those employed include: conductors, brakemen, engineers, firemen and helpers.

Sources
 Railway Transport, Part VI, Employment Statistics, Statistics Canada, Catalogue No. 52-212 Annual.
 Canadian Pacific Ltd., Statistics Canada, Catalogue No. 52-202 Annual.
 Canadian National Railways, Statistics Canada, Catalogue No. 52-201 Annual.

Table X
 Comparisons of Estimates of Average Annual Percentage Change in
 Total Factor Productivity of CN and CP

Study	Study Period	Average Annual Changes in Productivity		
		CN	CP	CN & CP
1. Caves and Christensen ¹	1956-75	3.1	2.7	
2. Roy and Cofskey	1956-75	3.8	3.9	
	1956-81	1.2	0.2	
	1970-81 ²	2.9	2.9	
3. Caves and Christensen ³	1956-63	1.8	1.7	1.7
	1963-74	4.3	3.3	4.0
	1956-74	3.3	2.7	3.3
4. Caves, Christensen, Swanson and Tretheway	1956-79	3.0	2.2	
	1975-79	3.7	1.0	
5. Freeman, Oum, Tretheway and Waters	1956-81	3.1	3.5	2.5 ⁴

- 1 These estimates are derived from the use of unweighted ton miles.
- 2 These estimates are taken from the same model form, but published in, *The Productivity and Cost Structure of Firms within the Rail and Air Transport Industry, Transport Review: Trends and Selected Issues, 1985*, CTC, Research Branch, Catalogue No. TT12-5/1985, Chapter 4.
- 3 Estimates of a specification using four output indexes, including weighted passenger miles and ton mile indices.
- 4 The average annual growth rate of total factor productivity for both railways was calculated after controlling for the effects of changes in outputs and route miles.

Sources

D. W. Caves and L. R. Christensen, *Productivity in Canadian Railways, 1956-75*, CTC, Report No. 10-78-16, August 1978.

Roger J. P. Roy and D. Cofskey, An Empirical Investigation for Canadian Class I Railways of both Performance and Industry Cost Structure, *Canadian Transport Research Forum*, 20th Annual Meeting, Toronto, May 1985, Proceedings.

D. W. Caves and L. R. Christensen: The Relative Efficiency of Public and Private Firms in a Competitive Environment: The Case of Canadian Railroads, *Journal of Political Economy*, 1980, Vol. 88, No. 51, pp. 958-976.

D. W. Caves, L. R. Christensen, J. Swanson and M. Tretheway, Economic Performance of U.S. and Canadian Railroads: The Significance of Ownership and the Regulatory Environment, in W. T. Stanbury and F. Thompson, editors, *Managing Public Enterprises*, Praeger, 1982, pp. 123-160.

K. D. Freeman, T. H. Oum, M. Tretheway and W. G. Waters II, Measuring and Identifying the Causes of the Productivity Performance of the Canadian Class I Railroads, 1956-81, *The Logistic and Transportation Review*, Vol. 21, No. 3.

Table XI
 Removal of Regulatory Support to the Rail Cartel:
 Proposals of "Freedom to Move" and Bill C-126, The National
 Transportation Act 1986

Activity	Regulation	Proposed Changes	
		Freedom to Move	Bill C-126
<u>Exchange of Information and Collective Pricing</u>	Railway Act Section 279	Elimination of the collective rate making provision through the sharing of information and the setting of common tariffs	Clause 339 repeals Section 279.
	Transport Act Section 32(2)	Removal of agreed changes	Sections 120-128 retain the provisions concerning agreed changes.
<u>Rates:</u>			
Rebates and Confidential Contracts	Railway Act 401	Removal of the prohibition on rebates and confidential contracts. Confidential contracts to be allowed on all domestic, overseas, import/export and transborder traffic, exclusive of grain traffic governed by specific legislation. No appeals to be allowed from confidential rate contracts. Rebates to be permitted.	Section 120(1). A Railway company may enter into a contract with a shipper that the parties agree to keep confidential respecting. . . (c) Rebates from rates set out in tariffs or confidential contracts. Section 60 (Public Interest). The Agency, when conducting an investigation, shall have regard to the following factors: (d) Whether an existing confidential contract with another shipper for transportation of substantially similar product creates an unfair advantage by providing a lower freight rate or better shipping conditions that cannot be justified by any cost or efficiency difference for shipments under substantially similar conditions.
Filing	Railway Act S.330, 331	All confidential contracts and shipments that qualify for subsidies under statutory rates will be filed. All other published tariffs will be retained for public scrutiny in the offices of the railways concerned.	Sections 120(2) and (3). Specify the filing of the contract with the Agency and the publication of the summary information in the contract.

Table XI (cont'd)

Activity	Regulation	Proposed Changes	
		Freedom to Move	Bill C-126
Maximum and Minimum Rates	Railway Act Section 278, 279	The provision that all freight rates shall be compensatory will be subject to a sunset provision, under which it will be repealed in 5 years. Repeal of the captive shipper provision. Instead, there will be a series of appeal provisions encompassing mediation and final offer arbitration.	Clause 339 repeals Section 278, which provided for the fixing of maximum rates for the shipper. Section 59(2)(b) (Public Interest). Eliminates the requirement that a <i>prime facie</i> case be established before the Agency may grant leave to appeal and proceed to investigate the action which is the subject of investigation. Section 62(1). In conducting an investigation under Section 59, the Agency may either hold public hearings or decide the matter on the basis of documents filed with the Agency.
	Joint Line Rates	Proposed to allow shippers captive to one rail-line to have access to the line of competing rail carriers by proving legislation for a joint-line rate from the traffic origin to its destination.	Section 112 (2) Every rate shall be compensatory. (3) A rate shall be deemed to be compensatory when it exceeds the variable cost of the movement of the traffic concerned as determined by the Agency. Section 134(2). . . . where a shipper has access to the lines of only one railway company at the point of origin or of destination of the movement of the traffic of the shipper . . . the local carrier . . . shall on the request of the shipper establish a competitive line rate applicable to the movement of the traffic . . . to or from the nearest interchange with a connecting carrier. Section 136. On the application of a shipper, the Agency shall, within 45 days of the receipt of the application, establish . . . ; (a) the amount of the competitive line rate.

Table XI (cont'd)

Activity	Regulation	Proposed Changes	
		Freedom to Move	Bill C-126
<u>Running Rights and Joint-Track Usage</u>	Railway Act Section 134	In instances where "the public interest or consideration of the economy and efficiency of the rail system" justifies the imposition of joint-track usage or shared railway running rights, the Governor-in-Council will be empowered a) to elicit railway co-operation and b) to authorize the (new) Regulatory Agency to determine appropriate compensation for the use of the right-of-way concerned.	<p>Section 147. A railway company may (b) use and enjoy the whole or any portion of the right-of-way, terminals . . . of any other railway company;</p> <p>(c) exercise full rights and powers to run and operate its trains on any portion of the railway of any other railway company.</p> <p>(2) The Agency . . . may make orders, directions and impose such conditions . . . as appear just or desirable to the Agency, having regard to the public interest.</p> <p>Section 148(2). Where the Governor in Council is of the opinion that the joint or common use of the same right of way by two or more railways may result in the improvement of the efficiency and effectiveness of transport by rail or may otherwise be in the public interest, the Governor in Council may request the railway concerned to consider such joint or common use.</p> <p>Section 149(1). . . . where a line or railway of a company intersects or crosses a line of railway of another company, either company may use and enjoy the right-of-way of the other company within a radius of 50 km of the intersection or crossing.</p> <p>Section 153(1). Where a line of railway of one railway company connects with a line of another railway company, the Agency may, on application . . . order the companies . . . order the companies that operate those lines to afford all reasonable and proper facilities for the safe and convenient interswitching at an interchange.</p>

Table XI (cont'd)

Activity	Regulation	Proposed Changes	
		Freedom to Move	Bill C-126
			(2) When the point of origin or of a destination of a movement of traffic is within a radius of 30 km of an interchange or such greater distance therefore as the Agency may prescribe, no company shall transfer that traffic at that interchange otherwise than subject to the terms, conditions and rates prescribed. . . .
			(5) The Agency is specified to make regulations specifying the terms and conditions applying to the interswitching limits.
			(7) . . .the Agency shall review the regulation . . . no later than five years.

Annex A.1

Transport of Grain Moving Under the Statutory Rates: Revenues and Costs, 1980 (\$ million)

Item	CN	CP	Total
Total Variable Costs	280,066	259,515	539,521
User Revenues	66,507	64,214	130,721
Per Cent of Costs	23.8	24.7	24.2
Gross Revenue Shortfall	213,499	195,301	408,800
Per Cent of Costs	76.2	75.2	75.7
Federal Government Payments	78,825	89,106	167,931
Per Cent of Costs	28.2	34.3	31.1
Statutory Rate Revenues	66,065	63,815	129,880
Variable Costs to Statutory Rate Revenues	4.3	4.1	4.1
Total Freight Revenues 1980	2,189,400	1,546,800	3,736,200

Sources 1980 Costs and Revenues Incurred by the Railways in the Transportation of Grain under Statutory Rates. Snively, King and Associates, Transport Canada, January 1982, prepared for the Grain Transportation Directorate.
 Railway Transport, Part II, Financial Statistics 1980, Statistics Canada, Catalogue No. 52-208.

Annex A.2

Average Transport Charges in Goods Producing Industries 1981

INDUSTRY GROUP	DOMESTIC SALES Transport charges from producers to purchasers (delivery transport cost) as a percentage of output valued in producers prices		EXPORTS Transport charges from producers to the Canadian border as a percentage of output valued in producers prices	
	All transport	Rail	All transport	Rail
Agriculture	3.1	0.6	6.4	2.7
Forestry	4.5	1.1	7.6	2.3
Fishing, Hunting, Trapping	2.3	0.1	3.0	0.2
Gold Mines	1.4	0.2	2.7	0.1
Uranium Mines	0.6	0.08	1.2	0.1
Iron Mines	10.8	5.3	12.8	6.4
Base Metal & Other Metal Mines	3.0	1.9	5.8	3.6
Coal Mines	9.8	7.0	53.0	38.1
Petroleum and Gas Wells	0.3	0.01	3.8	3.2
Asbestos Mines	10.3	2.4	9.0	1.5
Gypsum Mines	51.1	31.8	39.3	24.5
Salt Mines	38.6	11.6	17.0	5.1
Other Non-metal Mines	18.1	8.1	20.7	12.2
Quarries & Sand Pits	26.4	7.3	23.7	7.2
Services incidental to Mining	0.05	0.003	3.7	0.2
Slaughtering and Meat Processors	1.7	0.2	2.1	0.5
Poultry Processors	1.9	0.6	1.7	0.4
Dairy Factories	2.0	0.1	2.2	0.1
Fish Products	3.9	0.5	1.2	0.1
Fruit and Vegetable Processing	4.1	1.8	3.6	2.0
Feed Mfgrs.	2.1	0.4	3.9	1.1
Flour and Breakfast Cereals	4.3	2.2	3.2	1.6
Biscuit Mfgrs.	2.0	0.1	2.3	0.2
Bakeries Mfgrs.	2.2	0.2	3.2	0.3
Confectionary Mfgrs.	3.5	0.6	4.3	0.7
Sugar Refineries	2.2	0.5	8.0	1.9
Vegetable Oil Mills	3.9	2.5	6.3	4.1
Miscellaneous Food	3.4	1.2	4.3	1.9
Soft Drink Mfgrs.	1.9	0.1	1.3	0.1
Distilleries	3.9	0.4	6.2	0.7
Breweries	1.6	0.4	2.3	0.7
Wineries	2.7	0.1	3.6	0.1
Leaf Tobacco Processing	0.7	—	2.6	—
Tobacco Products Mfgrs.	1.7	0.3	2.7	0.4
Rubber Footwear Mfgrs.	1.3	0.1	1.7	0.2
Tire and Tube Mfgrs.	3.5	0.7	3.6	0.7
Other Rubber	2.4	0.3	2.7	0.5
Plastic Fabricators	2.1	0.5	2.5	0.6
Leather Tanneries	1.6	0.01	3.1	0.01
Shoe Factories	1.8	0.02	1.4	0.2
Leather Glove Factories	3.4	0.002	2.2	0.05
Small Leather Goods Mfgrs.	2.6	0.8	3.7	0.85
Cotton Yarn and Cloth Mills	1.4	0.1	2.3	0.6
Wool, Yarn and Cloth Mills	1.5	0.08	3.3	0.1

Annex A.2 (cont'd)

INDUSTRY GROUP	DOMESTIC SALES Transport charges from producers to purchasers (delivery transport cost) as a percentage of output valued in producers prices		EXPORTS Transport charges from producers to the Canadian border as a percentage of output valued in producers prices	
	All transport	Rail	All transport	Rail
Synthetic Textile Mills	1.6	0.1	2.1	0.2
Fiber Preparing Mills	4.0	0.3	10.3	2.6
Thread Mills	1.2	0.01	1.2	0.01
Cordage and Twine	6.2	0.7	6.5	0.47
Narrow Fabric Mills	1.8	0.09	2.7	0.21
Pressed and Punched Felt Mills	2.4	0.2	3.6	0.4
Carpet, Mat and Rug Ind.	2.8	0.5	3.9	0.7
Textile Dyeing and Furnishing	0.5	0.06	1.5	0.02
Canvas Products	2.8	0.3	3.0	0.3
Cotton and Jute Bag Ind.	4.9	0.3	5.5	0.2
Misc. Textile	2.8	0.8	2.3	0.6
Hosiery Mills	4.1	0.7	2.8	0.4
Other Knitting Mills	2.4	0.4	2.3	0.1
Clothing	3.2	0.2	2.7	0.1
Sawmills	10.9	5.8	11.5	4.1
Veneer and Plywood	7.6	4.4	5.2	2.9
Sash. and Door and Planing Mills	1.9	0.7	4.6	1.7
Wooden Box Factories	4.5	0.3	7.6	2.1
Coffin and Casket	5.5	3.3	6.2	3.7
Mis. Wood Inds.	6.3	1.2	7.1	1.8
Household Furniture	2.9	0.07	2.0	0.07
Office Furniture	2.7	0.04	1.9	0.3
Other Furniture	2.6	0.05	3.0	0.7
Electric Lamp and Shade	3.6	0.004	3.0	0.02
Pulp and Paper	5.2	1.9	5.3	1.9
Asphalt and Related Products	5.8	1.9	4.7	1.6
Paper Box and Bag Mfgs.	2.3	0.3	5.1	1.0
Other Paper Converters	3.7	0.8	3.9	0.9
Printing and Publishing	1.6	0.1	0.3	0.4
Engraving, Stereotyping	3.0	0.7	5.7	0.9
Iron and Steel	3.8	1.6	4.1	1.6
Steel Pipe and Tube Mills	4.1	1.4	4.4	1.5
Iron Foundries	4.4	0.6	3.6	0.5
Aluminium Smelting and Ref.	5.2	1.4	2.9	0.5
Other Smelting and Refining	2.4	1.0	2.6	0.5
Aluminium Rolling and Extruding	1.8	0.5	6.0	1.9
Copper and Alloy Rolling	3.0	0.2	1.9	0.2
Metal Casting and Extruding NES	4.9	1.4	5.4	1.8
Botler and Plate Works	2.7	0.5	2.8	0.4
Fabricated Struct. Metal	1.7	0.6	3.8	1.1
Ornamental and Arch. Metal	2.0	0.1	3.3	0.5
Metal Stamp. Press and Coat	2.7	0.5	2.1	0.5

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Annex A.2 (cont'd)

INDUSTRY GROUP	DOMESTIC SALES Transport charges from producers to purchasers (delivery transport cost) as a percentage of output valued in producers prices		EXPORTS Transport charges from producers to the Canadian border as a percentage of output valued in producers prices	
	<u>All transport</u>	<u>Rail</u>	<u>All transport</u>	<u>Rail</u>
Wire and Wire Products Mfgrs.	3.2	0.3	3.6	0.3
Hardward Tool and Cutlery Mfgrs.	2.6	0.2	3.3	0.3
Heating Equipment Mfgrs.	2.5	0.4	2.6	0.5
Machine Shops	1.6	0.3	2.8	0.4
Misc. Metal Fabricating	3.3	0.5	3.2	0.6
Agricultural Implement	2.0	0.3	1.4	0.3
Misc. Machinery and Equipment Mfgrs.	2.1	0.2	3.1	0.3
Comm. Refrig. and Air Cond. Mfgrs.	1.5	0.7	1.0	0.4
Office and Store Machinery Mfgrs.	2.6	0.03	1.7	0.02
Aircraft and Parts Mfgrs.	1.1	0.09	0.7	0.1
Motor Vehicle Mfgrs.	1.9	0.8	1.0	0.5
Truck Body and Trailer Mfgrs.	2.1	1.0	2.5	1.0
Motor Vehicle Parts and Access Mfgrs.	1.8	0.5	1.8	0.5
Railroad Rolling Stock	1.1	0.4	1.7	0.8
Shipbuilding and Repair	0.4	1.2	1.3	0.3
Misc. Transportation Equipment	2.3	0.6	1.7	0.7
Small Electrical Appliances	2.3	0.3	1.1	0.1
Major Appliances Elect. and Non	2.3	0.7	2.4	0.7
Radio and Television Receivers	1.1	0.01	2.1	0.01
Communications Equipment Mfgrs.	1.2	0.06	2.1	0.06
Mfgrs of Electr. Ind. Equip.	1.4	0.1	2.1	0.1
Battery Mfgrs.	2.2	0.2	1.2	1.3
Mfgrs of Electric Wire and Cable	2.1		4.0	0.9
Mfgrs. of Misc. Elect. Products	2.9		2.4	0.3
Cement Mfgrs.	11.8	5.4	16.2	7.4
Lime Mfgrs.	14.7	4.3	16.8	4.9
Concrete Product Mfgrs.	9.8	1.2	5.2	0.7
Ready-mix Concrete Mfgrs.	2.4		5.9	1.3
Clay Products Mfgrs.	6.2	2.4	3.6	1.4
Refractories Mfgrs.	3.8		2.0	1.2
Stone Products Mfgrs.	7.3		8.0	6.2
Other Non-metallic Products	9.1	0.9	7.6	2.0
Glass and Glass Products Mfgrs.	3.3	0.7	3.7	0.8
Abrasive Mfgrs.	4.6	0.5	4.8	0.6
Petroleum Refineries	2.6	0.6	3.5	1.4

Annex A.2 (cont'd)

INDUSTRY GROUP	DOMESTIC SALES Transport charges from producers to purchasers (delivery transport cost) as a percentage of output valued in producers prices		EXPORTS Transport charges from producers to the Canadian border as a percentage of output valued in producers prices	
	All transport	Rail	All transport	Rail
Other Petrol and Coal Products	10.0	3.5	8.1	2.9
Mfgs. of Mixed Fertilizers	8.4	5.1	21.1	12.7
Mfgs. of Plast. and Synth. Res.	1.7	0.7	2.6	1.2
Mfgs. of Pharm. and Medicines	1.6	0.1	1.0	0.07
Paint and Varnish Mfgs.	3.2	0.3	1.8	0.5
Mfgs. of Soap and Cleaning Comp.	3.5	0.7	3.4	0.8
Mfgs. of Toilet Preparations	2.9	1.0	2.6	0.8
Mfgs. of Industrial Chemicals	4.9	2.2	5.3	2.8
Other Chemical	4.3	1.1	4.1	1.3
Scient. and Prof. Equip. Mfgs.	1.3	0.08	1.6	0.1
Jewelry and Silverware Mfgs.	1.4	0.1	2.8	0.1
Broom, Brush and Mop	2.4	0.7	2.0	0.3
Sporting Goods and Toy	1.8	0.1	1.6	0.1
Linoleum and Coated Fabrics	2.4	0.2	4.7	0.3
Signs and Display	2.4	4.1	1.6	0.3
Misc. Manufacturing Ind. NES	3.7	0.6	2.3	2.6
Pipeline Transport	0.03	0.02	0.2	0.1
Communication Ind. NES	0.02	—	0.1	—
Electric Power	—	—	0.01	0.01
Gas Distribution	—	—	0.1	0.08
Wholesale Trade	1.7	0.3	0.2	0.06
Retail Trade	0.03	—	1.4	0.2

Source Statistics Canada. Input-Output models.

Annex A.3

Book Values of Rates of Return on Selected Class I Railroads, U.S.A.
1966-1979

Railroad	1966-70	1971-75	1976-79
	(Per cent)		
Alabama Great Southern	—	—	8.9
Atchison, Topeka, Santa Fe	6.1	7.0	8.2
Baltimore and Ohio	5.5	7.0	8.2
Bessemer and Lake Erie	—	—	14.7
Boston and Main	—	—	0.4
Burlington Northern	5.1	4.6	5.1
Central of Georgia	—	—	10.9
Chesapeake & Ohio	6.6	7.1	4.7
Chicago, Milwaukee, St. Paul & Pacific	3.4	2.3	-4.9
Chicago and Northwestern	3.0	7.0	6.7
Chicago, Rock Island and Pacific	1.6	-2.0	-2.0
Cincinnati, New Orleans and Texas Pacific	9.2	12.8	17.6
Clinchfield	—	—	21.2
Colorado and Southern	—	—	2.6
Denver and Rio Grande Western	9.8	10.2	10.8
Delaware and Hudson	—	—	4.9
Detroit, Toledo and Ironton	—	—	5.1
Duluth, Missabe and Iron Range	—	—	5.1
Elgin, Joliet & Eastern	—	—	17.6
Florida East Coast	3.7	9.6	8.6
Grand Trunk Western	—	—	3.9
Inninois Central Gulf	5.2	5.0	2.5
Kansas City Southern	—	—	8.9
Louisville and Nashville	6.2	6.7	6.2
Missouri-Kansas-Texas	—	—	2.1
Missouri Pacific	5.9	6.8	9.4
Norfolk and Western	8.8	9.0	10.8
Pittsburgh and Lake Erie	9.6	7.7	11.3
Richmond, Frederickburgh & Potomac	12.2	13.6	13.2
Seaboard Coast. Line	5.7	5.9	7.8
Soo Line	5.7	8.4	10.7
Southern	9.3	9.0	9.2
Southern Pacific	6.8	6.9	5.8
St. Louis-Southwestern	—	—	10.5
Union Pacific	8.0	9.6	10.8
Western Maryland	—	—	8.7
Western Pacific	3.9	4.7	6.7

Source Theodore E. Keeler, *Railroads, Freight and Public Policy. Studies in the Regulation of Economic Activity.* (The Brookings Institute/Washington D.C.), Tables 1-2 and 1-3, pp. 9-10.

