

THE UNIVERSITY OF MANITOBA

THE IMPLICATIONS OF THEORETICAL AND  
HISTORICAL FACTORS FOR THE USE OF COST IN  
CANADIAN RAILWAY REGULATION

by

KENNETH J. MacLEOD

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
MASTER OF ARTS

DEPARTMENT OF ECONOMICS

WINNIPEG, MANITOBA

OCTOBER, 1976



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## ABSTRACT

The topic of this thesis involves Canadian railway regulation. The argument which the thesis attempts to examine and support is embodied in the hypothesis that "neither economic theory nor the evidence provided by Canadian regulatory experience can be said to justify a scheme of railway regulation whose primary aim is to create or perpetuate a system of rates based on cost."

As the wording of the hypothesis suggests, the thesis is divided into two principal parts, the first dealing with theoretical considerations and the second dealing with historical factors. Both parts are divided into several chapters, each of which is designed to support the central argument.

The first part, that dealing with theoretical matters connected with railway regulation, begins by considering the economic function of transportation in modern society. Subsequently, questions of the economic basis of railway costs and the problems attending their measurement are dealt with. Even with respect to these internalities alone, it is contended that the task of fabricating a cost-based railway rate structure is a complex

and often arbitrary one. Consideration of externalities is likewise pursued. It is contended that the influence of externalities tends further to diminish the desirability of precisely aligning railway rates with calculable internal costs. With a view to further illuminating the complexity of rate determination, the economic implications of this monopolistic-oligopolistic structure of Canada's railway industry are examined. The conclusions obtained from the theoretical questions explored in the first part are that it is neither practical nor desirable to tie railway rates to the conventional commercial concept of cost.

The second part treats a wide range of historical influences which have combined to mould Canadian railway regulation. Five categories of historical influence are explored, namely: military, political and social factors; national and regional development factors; service maintenance factors; carrier finance factors; and structural factors. The examination of all of these categories reveals several factors indifferent or inimical to the creation or use of a system of railway rates based on cost. The operation of these factors is largely responsible for the controversy surrounding the determination and regulation of railway rates in Canada. It is evident that the development of the country's rail system has frequently been incompatible with neo-classical notions of competition and consumer preference. In fact, considerations of "public" or

"national interest" have dominated the formulation of railway policy, including questions of rate regulation. The conclusions obtainable from the second Part therefore also validate the hypothesis.

## ACKNOWLEDGEMENTS

Without the patience and sound advice of my advisor, Professor R. F. Harris, I should not have been able to organise and complete this paper. His help made a daunting task manageable and rescued me from many a dead end.

I am also particularly indebted to Professor Sam Trachtenberg for his encouragement and suggestions. His thoughtful provision of advice and material helped to discipline my thinking and expedite my work.

## TABLE OF CONTENTS

	<u>Page</u>
GENERAL INTRODUCTION . . . . .	1
PART I . . . . .	6
CHAPTER	
I. INTRODUCTION. . . . .	7
II. MICRO-ECONOMIC THEORY OF TRANSPORTATION - TRANSPORTATION AS AN ECONOMIC PHENOMENON. . . . .	10
III. MICRO-ECONOMIC THEORY OF TRANSPORTATION - TRANSPORTATION MARKETS. . . . .	20
IV. LOCATION THEORY & THE SPATIAL SIGNIFICANCE OF TRANSPORTATION. . . . .	25
V. LOCATION THEORY & TRANSPORTATION COSTS AND RATES . . . . .	45
VI. SOME TRANSPORTATION IMPLICATIONS OF MACRO-ECONOMIC POLICIES . . . . .	71
VII. TRANSPORTATION & TECHNOLOGICAL CHANGE . . . . .	86
VIII. TRANSPORTATION & ECONOMIC PROGRESS. . . . .	90
PART II. . . . .	115
IX. INTRODUCTION. . . . .	116
X. MILITARY, SOCIAL AND POLITICAL ASPECTS. . . . .	124
XI. NATIONAL ECONOMIC DEVELOPMENT ASPECTS . . . . .	181
XII. SERVICE MAINTENANCE ASPECTS . . . . .	215
XIII. CARRIER FINANCIAL STABILITY ASPECTS . . . . .	224
XIV. MONOPOLY-OLIGOPOLY ASPECTS. . . . .	241

Page

CONCLUSIONS. . . . .	275
APPENDIX "A" . . . . .	279
BIBLIOGRAPHY . . . . .	281

## GENERAL INTRODUCTION

This thesis will examine the economic context of Canadian railway regulation from two points of view, namely the theoretical and the historical. The approach will be, first, to examine, by reference to economic and transportation theory some of the tasks which railway regulation can be expected to undertake and some of the problems it must encounter, and second, in somewhat parallel fashion to examine most of the major regulatory tasks and problems revealed in Canadian railway history. Frequently, throughout this paper, regulatory tasks and problems will be signified by the phrase "purposes of regulation", more in an effort at abbreviation than in an effort at establishing a teleology of railway regulation. The hypothesis which their examination will attempt to explore and test is 'Neither economic theory nor the evidence provided by Canadian regulatory experience can be said to justify a scheme of railway regulation whose primary aim is to create or perpetuate a system of rates based on cost.'

This dual topic is obviously not a narrow one, but it is disciplined by its attention to the significance of cost in those areas of railway regulation concerned or associated

with rates. The regulation of transportation (and, particularly at the national level in this country, railway transportation), is an established fact. It occurs in most advanced countries, Canada being no exception. The transportation system of this nation has experienced regulation in one form or another since before Confederation: regulation not confined to the delineation and enforcement of safety or other technical standards, but having economic content and 'purpose'. The national regulatory apparatus employs large numbers of people. Its activities and decisions regularly occupy the attention of legislators. A considerable body of law supports and defines its functions. Lawyers, consultants, and Royal Commissions devote their activities to studying and attempting to alter it. It is the subject of occasionally bitter political discourse between jurisdictions or areas. An attempt will be made to cast some light on its controversial aspects.

Regulation may be viewed as a function of three elements: first, the institution regulated; second, the institution which regulates; and third, the purposes of regulation. All three of these elements operate simultaneously, but are capable of being analysed individually. Of them, the purposes of regulation could be said to provide the animating force, and the discussion of that category could therefore be used to focus the treatment

of all three elements. Consequently, the identification and understanding of the purposes of Canadian railway regulation is of sufficient independent significance to comprise an important theme of this paper. It is pursued through the medium of an hypothesis whose exploration requires an analytical review of the context of railway regulation in Canada.

Before detailed analysis of the purposes of regulation can begin, an adequate working definition of 'regulation' must be supplied. In the transportation milieu what does the concept of regulation entail? At the most fundamental economic level regulation means legally sanctioned intervention into the workings of an institution for the purpose of securing certain economic results. In the case of transportation the 'institution' in question is the transportation system (which in turn may be defined as the enterprises which undertake the service of moving goods and persons, and the facilities which these enterprises operate) or one of its modal components. The source of the 'legally sanctioned intervention' is the governmental system of the jurisdiction in which the transportation system is situated. The 'economic results' mentioned embrace matters ranging from the structural characteristics of the transportation system to its performance in terms of prices, costs, output, and efficiency. The deliberate use of the word 'intervention' denotes the assumption of a divergence

between the 'economic results' which occur as the goal and presumptive consequence of the political decision to intervene, and the 'economic results' which would otherwise obtain.

The preceding definition is, in the most abbreviated sense, a theory of regulation. One of its central components is the concept of intervention, with its clear implication that the economic results produced by the unregulated transportation system do not satisfy certain standards which are socially determined (presumably but not necessarily under the influence of economic considerations), politically expressed and legally formulated. Without this need for intervention, transportation regulation would have no purpose.

Just as the term 'regulation' required definition, so must the phrase 'purposes of regulation' be further explained. This thesis will rely on a personal and rather flexible interpretation of 'purpose'. This conception of regulatory purpose (i.e. the tasks and problems mentioned above) is neither narrow nor strictly literal. Its scope embraces not only the explicit purposes of regulation (e.g. as spelled out in statutes or official policy announcements) but also those pressures or constraints which have exerted strong enough influence on the environment within which the regulatory system operates to significantly affect that system's goals and/or operations. To use an analogy; some

important regulatory purposes might be no more explicit in regulatory statutes than is the prevention of homicide an explicit purpose of statutes prescribing procedures and penalties in murder cases. Hence to establish a satisfactorily comprehensive set of regulatory purposes, processes of deduction and inference are required. Of equal importance in this quest for comprehensiveness is the necessity of exploring both theoretical and historical matters. This is accomplished by the use and testing of a dual hypothesis.

PART I

## CHAPTER I

### INTRODUCTION

The formidable array of railway regulatory laws and mechanisms did not arise gratuitously. It evolved in response to socially perceived needs. The purpose of this Part is to examine one important category of reasons for the existence of transportation regulation.

To understand the concept of regulation one must understand not only the workings of the transportation system but also the social, political and legal climate within which it operates. This Part will attempt to satisfy the first of those two requirements, - the requirement to understand the functioning of the transportation system. In so doing it will discuss those aspects of economic theory which bear directly on the regulation of transportation. Specifically the intention will be to explain why the generally accepted theories about the structure and performance of the various components (and especially the railway component) of the transportation system can be said to facilitate or - depending on one's ideological predilections - necessitate the adoption of those public policy measures usually referred to in the

aggregate as regulation.

With its emphasis on the economic theory of transportation this chapter takes the deductive approach to ascertaining the reasons for the regulation of transportation. The theory in question describes the economically significant attributes of the components of the transportation system and the principles according to which it operates.

From the regulator's point of view the theoretical approach confers four advantages. Theory provides fundamental insights into the basic nature of the system whose regulation is being contemplated. Theory can reveal those aspects of the system's performance which warrant intervention. Should intervention be in order theory can suggest the manner in which intervention should occur and its probable consequences. And finally, theory can provide standards to guide the regulatory power and to evaluate its accomplishments.

An understanding of the economic theory of transportation is therefore a considerable aid to a study of transportation regulation. Because its ultimate aim is to make certain statements about regulation, this Part will confine itself to a selective treatment of transportation theory. Both in selection and in interpretation those aspects of the economic theory of transportation which yield insights into regulation will be emphasized. It is to be

hoped that this process of selection will simplify the path toward the desirable understanding of regulation without invalidating (at least on procedural grounds) the conclusions obtained.

The elements of transportation theory which will be considered fall within these categories:

- those which deal with the organization and output of the transportation system;
- those which deal with the relationship between transportation activity and certain other forms of economic activity; and
- those which deal with location theory (which is understood for those purposes to mean the link between economics and geography).

These elements will be explored with a view to ascertaining whether they justify the basing of railway rates on costs. This exploration will constitute the testing of the first segment of the dual hypothesis.

## CHAPTER II

### MICRO-ECONOMIC THEORY OF TRANSPORTATION - TRANSPORTATION AS AN ECONOMIC PHENOMENON

Conventional economic theory treats transportation activity in much the same way as it treats other forms of economic enterprise. Transportation exists in response to demand. In meeting this demand the transportation system encounters the phenomenon of cost. Demand and cost are reconciled by individual firms through the medium of markets. In the economic sense transportation therefore possesses many characteristics common to other industries considered by micro-economic theory.

The transportation system exists in the form of a network which links the economically active portions of the area served by the system. The function of this system and its network is to provide for the physical transfer of persons and goods between geographic points on the network. The principal active components are transportation enterprises or firms which may be denoted collectively as the transportation industry and by modes as the railroad industry, trucking industry, and so on. Most of the firms operate in markets according to commercial principles and

with commercial goals; much of their revenue (the preponderance if their activities are confined to transportation) is derived from the carriage of goods and persons. For this reason the name "carriers" is often applied to the firms.

In economic terms the output or product of the transportation industry is a service. In their transportation capacity member firms of the industry do not produce physical things, tangible products. Nor do these firms add purely physical attributes to the things they move. They do, however, augment certain desirable attributes of the things moved. The physical transfers performed by transportation enterprises create "space" and "time" utility which accrues to the objects carried over the transportation system.<sup>1</sup> This creation of time and space utility is the essence of the service provided by the transportation system. It occurs, as mentioned, with respect to physical items and goods, but it also occurs with respect to people. In either case, the creation of space and time utility can have commercial value susceptible to determination in markets. People are willing to pay to have their goods or themselves moved between various locations within definite time spans. Transportation service can therefore be consumed directly by people or it can be used

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<sup>1</sup>R. J. Sampson and M. T. Farris, *Domestic Transportation* (Boston: Houghton Mifflin, 1966), p. 5.

in the capacity of an "intermediate service"<sup>2</sup> to augment the time and space utility attributes of other products. Either way transportation serves to organize human relationships - on a primarily social level in the former case, and on a primarily economic level in the latter case.<sup>3</sup> In either case society and its markets recognize the particular demand for transportation services and devote resources accordingly.

That transportation services can fall into the category of final goods is obvious enough. The idea that transportation may also fall into the category of "intermediate services", however, deserves further attention. The key to understanding the position of transportation as an intermediate service lies in the concept of "derived demand."<sup>4</sup> This concept revolves around the proposition that the demand for a factor of production is ultimately determined by the demand for the final good for whose production the factor in question is used. Interpreted in light of the concept of derived demand, a transportation service can be considered a factor of

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<sup>2</sup>J. B. Lansing, *Transportation and Economic Policy* (New York: Collier-MacMillan, 1966), p. 12. By Lansing's definition on the same page: "that part of the transportation of people which is in connection with their work. . . plus virtually the whole of the transportation of goods are 'intermediate' services."

<sup>3</sup>Sampson and Farris, *op. cit.*, p. 77.

<sup>4</sup>e.g. P. A. Samuelson and A. Scott, *Economics - An Introductory Analysis* (Toronto: McGraw-Hill, 1966), p. 558.

production whenever the demand for it is derived from the demand for the things transported. The theory that the fundamental significance of the physical transfer of goods lies in adding "time" and "place" utility to those goods possesses merit in two respects. First of all, with its emphasis on 'utility' (a demand - related concept with a high subjective content) it corresponds to the relativist<sup>5</sup> market - oriented definition of opportunity cost. Secondly, since it is entirely conceivable that - especially in the longer run - "time" and "place" utility can be more economically created (e.g. by changing the location of production) than by using transfer services (within limits, of course), this conception also strengthens the definition of transfer services as a factor of production by suggesting the technological possibilities of substitution (dependent, presumably, on relative costs).<sup>6</sup>

The significance of transportation as an ubiquitous factor of production will be discussed later.

Whether directed to an 'intermediate' or a 'final' role, transportation service, for analytical purposes, can be divided into discrete units. In designation these units frequently describe the accomplishments of the transportation system; designations such as 'ton-miles' or

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<sup>5</sup>A characteristic emphasized in Hayek's article, "The Use of Knowledge in Society," *American Economic Review*, September, 1945, pp. 519-530.

<sup>6</sup>Lansing, *op. cit.*, ch. 1.

'passenger-miles' are common.

Similarly, for the purposes of analysis and argument, many elements of the costs incurred by transportation enterprises can be divided into small and discrete units. Other cost elements however, cannot be resolved into small units except by the purely conceptual process of averaging. This is particularly true of railways, an industry characterized by heavy investment in durable capital equipment.

While itself incurring costs the transportation industry produces a service which in turn becomes a cost to many other industries. An understanding of the pervasive concept of cost is therefore central to the understanding of the economic significance of transportation.

What is the fundamental nature of the costs incurred by transportation enterprises? The answer can be found in the fact that the transportation industry, just like other 'productive' segments of the economy, utilises in the performance of its functions 'scarce' factors of production (falling into the general categories of capital, labour, and raw materials) thus effectively precluding the use of such factors by other firms throughout the economy. Hence transportation enterprises are subject to the universal phenomenon of 'opportunity cost'; i.e. the significance of their appropriation of resources lies in the fact that possible alternative employers of such resources are

deprived of the opportunity to use them.<sup>7</sup>

The 'opportunities-forgone' concept of cost deserves elaboration. Insofar as the rules of factor market equilibrium prescribed by conventional micro-economic theory operate, this can be done by examining the market for a single factor of production. Supposing  $x$  to be used by many firms in several industries, and each user industry to be in or very close to a state of equilibrium, it is possible to make two major assertions. First, the unit price of  $x$  encountered by each firm will be virtually constant; i.e. purchases by any one firm will be in the nature of 'marginal' adjustments, insufficient in quantity to influence the prevailing price. Secondly, for each firm using  $x$ , the revenue obtained as a result of the use of a last increment of  $x$  (the marginal revenue product of  $x$ ) equals the price of the incremental unit of  $x$  (from the firm's point of view, the marginal cost of  $x$ ). Assuming the existence of diminishing returns in each of the various production processes employing  $x$ , this equality of marginal revenue product and marginal cost is a condition from which any producer firm using  $x$  will be loath to depart since "by employing an additional unit of factor  $x$ , either the producer can add to his output  $MP_x$ , the marginal product of  $x$ , whose value to him is the price it will fetch in the

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<sup>7</sup>Lansing, *op. cit.*, p. 28.

market; or, if he does not want to raise his output, he can reduce the quantity of other factors employed, and so save on the cost of these other factors."<sup>8</sup>

It might seem that this approach to opportunity cost is circular and futile since it revolves around an assumed - and possibly arbitrary - factor price. The key to the concept of alternatives foregone, however, lies in the latter half of the cost-revenue equality. In the multi-industry context, 'opportunity cost' can be interpreted in terms of the inter-firm equality of the marginal revenue product of factor  $x$ ,  $MRP_x$ .  $MRP_x$  is itself the mathematical product of two components, the marginal physical product attributable to the use in the production process of an incremental unit of  $x$ , and the extra revenue (or marginal revenue) which the sale of that marginal physical product provides. Of these two components, the physical one only indicates the technological opportunities for the use of  $x$ . Since factor  $x$  is used in different types of productive processes to produce different types of outputs, the physical quantities of which are consequently incommensurable, some common denominator must be found. It is provided by the relative market valuations of the increments of the different outputs in whose production  $x$  participates, the second or marginal revenue component of

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<sup>8</sup>T. Scitovsky, *Welfare and Competition* (London: Unwin, 1952), p. 125.

MRPx. Not only does MRPx comprehend both technological opportunity and - more importantly market opportunity (because of the relationship between marginal revenue and demand), but the equalization of MRPx among all users of x through the mechanism of the market for factor x reveals these two aspects of opportunity to be the basis of opportunity cost.

The preceding treatment indicates that the definition of opportunity cost relies mainly on the economic opportunities for the use of factors, and that the market prices of factors are relevant primarily as aids to commensurability. This is partially misleading for two reasons. First of all, the prices of factors are a major constraint on their use, a relationship which cannot be ignored. Secondly, factors of production are frequently themselves products of productive processes which utilize other factors of production according to the rules of factor market equilibrium discussed above.

The discussion of opportunity cost yields two conclusions of significance in evaluating the regulation of transportation. Initially, it may be stated that a vast system of interdependent factor and product markets causes considerations of opportunity cost to inhere in the price of any factor as well as in its alternative uses. In other words, there is an economy-wide allocation system guided if not strictly ruled by the criterion of opportunity cost, by

which scarce resources are 'rationed', and in whose operation public policy may be called upon to intervene. And in a sense it is possible to assert that the overall economic relevance of 'opportunity cost' is principally determined by the extent of its prevalence. To the degree that opportunity cost is compromised (for instance, either by being supplanted by another concept of cost or by being ignored in the economic system), repercussions spread throughout the system. Thus, the concept of opportunity cost represents a theoretically distinct and identifiable link between the transportation system and the rest of the economy, a link with regulatory implications.

As a contribution to the understanding of the purpose of regulation (in the context of the hypothesis) several important points are made in this chapter. First, the chapter suggests that, in a fundamental sense, the transportation industry shares economic characteristics in common with every other industry. Therefore, to the extent that one purpose of public policy may be simply to exert control over economic activity, the transportation industry (or sector) is at least as eligible for control via regulation as any other. Second, the chapter demonstrates that, besides being itself subject to costs, the transportation industry is involved in the process by which levels of costs and relationships among costs are determined for many other industries. Therefore, to the extent that

control over cost levels and/or relationships may be a purpose of public policy, the transportation industry is susceptible to regulation. Finally, the chapter indicates that the transportation industry provides intermediate and final services of the most profound social and economic importance. Should public policy seek to control or influence any aspect of the provision of those services, the transportation industry is liable to regulation.

More particularly this chapter contributes to the testing of the hypothesis by its discussion of opportunity cost. The suggestion that opportunity costs throughout the economy become the more obscure (i.e. difficult to measure) the more they are ignored in any markets means that it may be meaningless to tie railway rates to opportunity cost if that concept of cost is compromised elsewhere in the economy. In this sense, therefore, economic theory does not necessarily justify the basing of rates on costs.

## CHAPTER III

### MICRO-ECONOMIC THEORY OF TRANSPORTATION - TRANSPORTATION MARKETS

Insofar as the transportation system is concerned most questions of cost and demand are reconciled in markets. Three salient characteristics of transportation markets deserve mention at this point; each of them has regulatory significance.

Although the service offered by the transportation industry may be conceptually resolved into homogeneous units there are, for several reasons, many separate markets for transportation services. One of the principal reasons for this multitude of markets is the fact that much of the demand for transportation services is derived demand. For any good which is transported it is possible to present a demand curve which depicts the demand for the good in its ultimate delivered state. Such a curve will comprehend not only the utility for the good which derives from its physical characteristics, but also the space and time utility created by its transportation. Thus, even if transportation service is held to be technically homogeneous it is still realistic to maintain that to the extent that

there are variations in the elasticity of demand for transported goods, there is ample scope for variation in the elasticity of the derived demand for transportation. In simpler terms there is on the demand side the potential for the existence of a multiplicity of markets for transportation services. The conditions under which this potential is realised represent a subsequent question.

The levels of cost encountered by transportation enterprises also influence the nature of the market or markets for transportation services. To the extent that economies of scale are manifest in any market it may be feasible for a very few firms to operate at significantly lower average cost than could the large number of firms required to validate the pure or perfect competition model of economic performance. In the ultimate case the economies of scale are of such magnitude that only one firm per market can fully take advantage of them. This is the case of the natural monopoly,<sup>9</sup> best exemplified in the transportation

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<sup>9</sup>Most texts offer approximately the same definition of 'natural monopoly.' M. J. Brennan, *Theory of Economic Statics* (Englewood, New Jersey: Prentice-Hall, 1965), p. 270, offers the following:

It is entirely possible that production of the commodity is characterized by internal economies of scale over a very large span of outputs. If these economies of scale extend far enough, so that long-run average cost declines up to the quantity that would be demanded by the entire market, the industry in question is called a *natural monopoly*.

J. R. Meyer, M. J. Peck, J. Stenason and C. Zwick, *The Economics of Competition in the Transportation Industries* (Cambridge,

context by railroads, whose capital-intensive structure makes them particularly susceptible to significant economies of scale.

The variations in demand elasticity among different purchasers and the variations in cost characteristics among different categories of suppliers would in themselves be sufficient to fragment the overall market for transportation services into many distinct markets. Adding to the fragmentation tendency is the fact that one unit of transportation service may differ in quality from another; for instance a 'ton-mile' may or may not be performed under additional conditions of refrigeration, insulation, and so on. The combined effect of market fragmentation (especially when some of the markets are characterized by a degree of monopoly) and product variation is reflected in the pricing of transportation services. Virtually nowhere are units of transportation service available for sale at a constant per-unit price. At best transportation prices or rates 'taper' in a manner conditioned by costs.<sup>10</sup> Whenever its capital inputs are substantial, a transportation enterprise will encounter average costs which greatly exceed marginal costs

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Mass.: Harvard University Press, 1959), p. 5, point out that while the railway industry presented many of the earliest examples of natural monopoly, not all railways were or are monopolies.

<sup>10</sup>This is especially true of railways and the following passage is directed primarily at the railway situation.

over a wide range of lower volumes of production.<sup>11</sup> Profit maximization aims and the possession of whatever degree of monopoly power will encourage (and perhaps permit) the enterprise to recover as large as possible a portion of average cost from the purchaser of even the smallest volume of transportation service. In other words, average cost is an esteemed and frequently used lower limit for price setting. Since average costs in capital-intensive firms or industries can decline precipitously as volume increases, per-unit-of-service rates or prices based on them will similarly tend to decline. This tendency is known as 'tapering' and is very pronounced in many transportation markets.<sup>12</sup>

In brief and rather abstract terms this chapter has dealt with certain transportation market characteristics associated with price determination in the transportation industry. Particular notice must be taken of the comments on the relationship between demand, costs and prices as they apply to the railway mode. Therein are mentioned three of the sources of complexity and controversy in railway price-setting: first, the tendency of the 'derived demand' phenomenon to fragment rail services markets; second, the

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<sup>11</sup>Meyer *et al.*, *op. cit.*, ch. III contains a thorough discussion of this and related matters.

<sup>12</sup>C. Phillips, *The Economics of Regulation* (Homewood, Ill.: Irwin, 1969), p. 312. He maintains that some amount of tapering is the ideal configuration of railway rates.

tendency to monopoly in the rail mode; and third, the conflicting roles of average and marginal cost as pricing criteria. The complexity stemming from these three sources would be impossible to unravel simply by tying rail prices to costs, if for no other reason than that there can be conflicting definitions of 'cost'.

## CHAPTER IV

### LOCATION THEORY AND THE SPATIAL SIGNIFICANCE OF TRANSPORTATION

Regardless of the number of markets into which it is segmented or the virulence of monopoly in any particular market the transportation industry exists by virtue of its ability to create space and time utility by performing physical transfers. Essentially these transfers involve the conquest of obstacles, barriers of space and time. Even though these two barriers are necessarily overcome simultaneously, the conquest of the space barrier is generally deemed to be of primary, and the conquest of the time barrier of secondary and derivative importance.

Space is a geographic phenomenon; the effort to overcome it, an economic phenomenon. The two are synthesized in location theory. In a restricted but practical sense geography is distance and transportation removes or diminishes the economic consequences of distance. Location theory therefore presents the relationship between geography and economic activity through the medium of transportation.

It is a primary function of location theory to

provide an explanation - in economic terms - of the part played by the transportation network in the performance of the economy. The treatment abstracts from reality in that it adopts many restrictive assumptions concerning cost conditions, historical influences, and so on. Nevertheless the theory is relevant in two important respects. First of all, it indicates the conditions under which the physical exchanges essential to a specialised and interdependent economy occur. In effect the theory helps define or reveal the limit of the level of specialization and the degree of interdependence which an economy can attain.

Secondly, location theory provides important insight into the process of national geographic expansion and regional economic development. In this connection the limits imposed on inter-regional and intra-regional flows by transfer costs are indeed crucial variables. This aspect of the significance of location theory is especially relevant to the Canadian scene.

The distinguishing feature of even the most primitive location theory<sup>13</sup> is an attempt to formulate a general functional relationship between transfer costs and geographic barriers (the most prominent of which is distance), and then to explore the economic significance of this relationship. For the present purposes it will suffice to extract from extant literature the most suitable general

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<sup>13</sup> Sampson and Farris, *op. cit.*, p. 5.

statement of the so-called 'cost-distance' relationships and then to examine several of its practical implications.

The goal outlined above can best be reached by using a model. How does transportation affect the spatial pattern of economic activity? Tentative answers can be found by examining a simple decision-making model having two basic components, a producer firm faced with locational decisions, and the transportation network.

Despite its simplicity of composition the model operates according to a detailed set of assumptions. These assumptions are grouped into categories concerning the transportation network, concerning the terrain it covers, and concerning the firm, its activities, its factor mix, its competitive environment, its motives, and its decision-making. Each assumption in each category will be treated.

The transportation network is assumed to consist of the various carriers and the nodal points and arteries (visible and invisible) which they traverse in the course of moving goods and persons. The purpose of the network is assumed to be to provide the most economical possible carriage of cargo by whatever vehicles are most suitable. One of the salient features of the network is its extent. To presuppose the existence of the network is more or less the equivalent of the *ceteris paribus* assumption widely used in economic theory, for the existence of a transportation network in itself presupposes the existence of a whole

economic system in response to whose needs the network has evolved. Thus the arrangement of the network must be assumed to be systematic, as conditioned by: first, the varying technological characteristics of the several modes; second, the competitive situation with respect to the types of cargo requiring transfer; third, locations of materials sources, industries, and markets; and fourth, natural barriers.

This group of assumptions has two signal implications for the model. First the network is assumed to possess the technological ability to perform virtually the full range of transfer operations demanded of it. Second, it is deemed that the network is developed to a sufficient extent to be able to make practically identical movements at practically identical cost. This does not necessarily mean that rates to different shippers - even of the same commodity under similar conditions - will reflect costs to a uniform degree because the model does not require the assumption of any particular degree of competition. Thus conditions of pure or perfect competition need not prevail.

The rates offered by the transportation enterprises comprising the active part of the network are also subject to assumption. The assumption is negative in nature and is connected with the criteria of allocational efficiency derived from micro-economic and welfare theory. These criteria suggest the desirability of some correspondence

between rates and costs (particularly marginal costs). However, previous note has been taken of the widespread tendency for transportation rates to diverge significantly from costs. Therefore it is sufficient for the purposes of the model that rates exist of which the user (or potential user) of transfer services is informed. Yet the operation of the aforementioned criteria of allocational efficiency, if introduced subsequently, could make the model more meaningful in two ways. First, it could aid in the derivation of 'truer' (i.e. by some conformity of 'opportunity' and monetary costs) cost-distance relationships. And secondly, insofar as 'efficiency' of some 'price=cost' variety is (or even should be<sup>14</sup>) a policy goal - and it need not be - the model so enriched could illustrate some of the consequences of the policy. These two final points are, nevertheless, peripheral rather than essential to the functioning of the model.

Only two assumptions of any significance need be made about the geographic attributes of the model. First, it must be assumed that locations of economic significance are distributed at random, i.e. the locations of raw materials sources and markets are given but not coincident. Second, it is further assumed that distance is the only

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<sup>14</sup>See, for example, R. G. Lipsey, and K. Lancaster, "The General Theory of the Second Best," *Review of Economic Studies*, Vol. XXIV, of which detailed mention will subsequently occur.

geographic quality affecting the costs of providing transportation services, i.e. the terrain is considered uniform.

Of greater variety and complexity are the assumptions about the producer firm. In order to justify its inclusion in the model the firm must both be interested in and capable of making locational decisions. A manufacturing enterprise produces a tangible physical product which *ipso facto* must be transported to market. Manufactured products possess objective and subjective attributes which are augmented by the provision of the 'space' and 'time' utility created by the transportation system. As a consequence a manufacturing firm has been chosen to illustrate the model - in preference to a person, even though people display locational preferences both as consumers and producers. Several reasons justify this choice. First of all, the locational choices of business enterprises are more frequently activated by economically rational decision-making processes. On the one hand, the commercial firm is inherently more market-oriented than the individual.<sup>15</sup> Its primary interests are in its costs and present and expected future rates of earning, and in the regularity and stability of these variables. The enterprise must therefore be cognizant of (among other things) the

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<sup>15</sup>This somewhat contentious theme is developed in E. M. Hoover, *The Location of Economic Activity* (New York: McGraw-Hill, 1948), ch. 1.

prices and conditions in many markets and of pertinent developments in technology and the general economy. In fact, one of the attributes of even relatively small firms, is the possession of skilled personnel to whom this management function is assigned. On the other hand, the acquisition of such comprehensive information is beyond the ability of the average person, even were he interested in using it. The fact is that he is usually not. In the first place, an individual's initial (or major subsequent) locational decision is often not made solely in response to economic considerations. As Hoover points out "people. . . migrate in response to motives still imperfectly understood."<sup>16</sup> Moreover, the fact that individual consumption patterns often become habitual diminishes one of the major locational pressures: i.e. the locational preference of the individual in his capacity as a consumer can reach a state of rigidity which is only mitigated by rather severe relative (i.e. as between alternative locations) changes in consumer prices. Thus for the 'average person' - as distinguished from the 'average firm' - economic rationality is more likely to be submerged as a factor in locational choice.

Something further must be said about the assumption of the firm's capability for changing location. In this matter the generalization can be made that the typical

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<sup>16</sup> *Ibid.*, p. 2.

manufacturing enterprise should possess a significantly greater ability than the typical person. This for two reasons. First of all, the viable enterprise can be expected to have access to greater financial resources, whether generated internally or secured through borrowing. In the latter case the firm can be expected to receive not only larger absolute amounts (this being rationalized by reference to a larger tangible asset base or a greater amount of expected earnings) than the individual, but also better terms (at least in part because of a more justifiable assumption of economic rationality).

Secondly, there is the obstacle to mobility presented by the possession of physical assets. The ownership of fixed assets (e.g. a domestic dwelling or a relatively immobile piece of capital equipment) can deter locational change if its physical transfer or conversion into more liquid assets would work a substantial disadvantage upon its owner. In this area, the business enterprise again occupies a favoured position; its corporate structure (which term can be taken in the legal sense, but also more importantly, in the sense that the firm is an active but fluctuating combination of human and non-human components) enables it to undertake piece-meal transfers, while for an individual to act in the same manner would require an accomplishment of considerable anatomical novelty. Thus, Hoover attributes the shifts in location of most industries

to geographic differentials in the provision of production facilities, "the migration of labour usually occurring tardily or not at all."<sup>17</sup>

It may be considered important to assume that the firm consists either of one or of more than one plant. This distinction is, in fact, not necessary, since the model to be developed will apply equally well to the choice of an initial production site by an incipient one-plant firm or to the selection of a locus of expanded production by a multi-plant firm. Any incongruity which might attend this unrestrictive assumption is eliminated when it is remembered that the locational model is essentially a decision-making model. Hence, while for the mechanical purposes of the model, the single plant represents the simplest unit, the relevant decision-making unit is the firm. In other words the model will seek to illustrate the determination of the geographic site of a plant (even if it be the sole plant) of an enterprise.

A more important assumption involves the areas of choice open to the enterprise. Any manufacturing firm is

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<sup>17</sup> Hoover, *op. cit.*, p. 150. Hoover also assigns "a minor role" to the "actual relocation of firms or plants." I have chosen not to emphasize this point because:

- (i) I do not believe it invalidates the relative distinction between the firm and the individual.
- (ii) The simple locational model used here could also apply to an incipient enterprise.
- (iii) The close identification between 'firm' and 'plant' which Hoover draws from D. B. Creamer's analysis of U.S. Census data for 1928 to 1933 may not be as valid today.

confronted with two basic decisions, namely, what to produce, and where to produce it.<sup>18</sup> The locational model deals essentially only with the second problem. This restriction is merely an analytical simplification - it does not purport to say that the choice of product is always the primary choice and is *necessarily* made prior to and independently of the choice of site. It does, however, recognise that to explain the choice of product in conjunction with the choice of site would require a more comprehensive (e.g. Walrasian) type of model which would be undesirable because it would require additional assumptions which could render the final conclusions about location less tenable. Furthermore, once a device has been created which - given a decision concerning the type of production - indicates the determination of an ideal location, analagous reasoning can enable the same device to illustrate the determination of the ideal type of production. The following passage provides introduction to this question:

The activities of a productive enterprise can be divided for our purposes into three stages:

- (a) Procurement: purchasing and bringing the necessary materials and supplies to the site of processing.
- (b) Processing: transforming the materials into more valuable forms (products).
- (c) Distribution: selling and delivering the products.<sup>19</sup>

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<sup>18</sup> Hoover, *op. cit.*, p. 1.

<sup>19</sup> Hoover, *op. cit.*, p. 7.

Of these activities, 'procurement' and 'distribution' obviously require inputs of transfer services. The rational entrepreneur will presumably calculate the size of his requirement for the transportation factor of production in the theoretically conventional manner; that is, he will equate the ratios of the respective marginal physical productivities and prices for all the factors he employs in whatever capacity.<sup>20</sup>

Restricting the model to determining the ideal location for manufacturing a specified product entails yet another assumption about factors of production. It can reasonably be supposed that the prior determination of the product very substantially reduces (on technical grounds alone) the choice of factors open to the firm. From this it is a simple step to assume that only one set of factors is suitable to the "processing" activity. This implies that the *principal* means which the firm will use to attain producer's equilibrium will involve the manipulation of the amounts of the various transfer inputs, given their prices. The previous assumptions about uniformity of terrain and the fixity of all other locations makes it possible to assume that the sole source of the variation in transfer inputs is the alteration of the location of production.

Mention of calculating factor needs implies an assumption which must now be made explicit. It is here

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<sup>20</sup>Brennan, *op. cit.*, pp. 280-286.

assumed that the firm desires to maximize its profits and that it will adopt a strategy of cost minimization as one of the means to that end. For the purposes of the model this assumption means that the sole objective of the manipulation of transfer inputs is cost minimization. The producer firm is expected to react to the rates presented by the transfer system by forming locational preferences both as a purchaser (i.e. by reacting to the transfer rates related to the goods and services it purchases) and as a producer (i.e. through its reaction to the rates on the commodities it produces and sells).

In what competitive context does the process of cost minimization occur? The preceding discussion about the unique technological 'option' available to the firm is suggestive of the conditions obtaining under the regime of pure or perfect competition. Nevertheless the firm need not be subject to that regime. In amplifying the assumption Losch says:

Under uniform conditions in a free market the individual [sic] has no latitude in the choice of his location. The problem can thus have importance only either during the transition to equilibrium, or, in equilibrium itself, only in those industries where human or natural differences play a role or where a single enterprise produces a large part of total output.<sup>21</sup>

Thus, if one accepts the proposition that the usual

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<sup>21</sup>A. Losch, *The Economics of Location* (New Haven: Yale University Press, 1954), p. 6.

condition of the economy is one of transition (although the implication of inevitable equilibrium need not be accepted), one can proceed even without making specific mention of the operation of monopoly, oligopoly, monopolistic competition, and so on - to erect a locational model without undue trepidation. In fact, all that is necessary is that the enterprise in question be reasonably aware of the cost and demand curves (or conditions) which face it (this does not mean 'perfect knowledge').

Nor would the assumption of pure or perfect competition confer any positive benefit upon the analysis. For the prior conclusion that pure or perfect competition need not reign in the transfer industry effectively vitiates any economic welfare implications which the assumption of such a regime in any or all user industries might otherwise provide.

Regardless of the competitive environment the character of the firm's decision-making process must be established by assumption. Allusion has already been made to the question of producer equilibrium. In those cases where the conventional marginalist theory has been cited, the purpose has been primarily either to clarify certain definitions (e.g. that of opportunity cost) or to support certain assumptions. Nowhere has it been asserted that the method of varying the quantities of the different factors (given their prices) in order to establish a comprehensive

set of marginal equivalences is always practicable. For even were a commercial endeavour capable of the most thorough and ruthless economic rationality, it would be beyond the power of current techniques of measurement to provide the necessarily perfect information.

If the 'precise' method postulated by theorists cannot be implemented, what is the alternative? August Losch explains the predicament in the following manner:

The location of an industrial enterprise is selected by the entrepreneur. His choice rests upon subjective consideration. He will, of course, bear objective facts in mind, but these alone cannot dictate location.<sup>22</sup>

Does this imply a surrender to intuition and thus render the construction of a locational model futile? No, for it is possible to accept a modified view of Losch's rather severe contention, a view which accepts the potential fallibility of a scheme relying solely on those "objective facts" which the entrepreneur is capable of perceiving, yet still assigns primacy to them.<sup>23</sup>

In fact, for the purposes of the model, the ambiguous term, 'objective facts' can be defined in terms of two types of data. Of the two, the more important category comprises transfer costs. The second category is that composed of geographic facts. Because of the explicit

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<sup>22</sup> *Ibid.*

<sup>23</sup> This attitude is apparent in Hoover, *op. cit.*, ch. III.

assumptions (e.g. those concerning 'processing' costs and geographic uniformity) already made, it is possible to identify the former category as the sole economic expression of the latter category and thus to deal with them simultaneously. This amounts to reiterating one of the principal postulates of location theory, namely that the sole significance of geographic obstacles lies in the transfer costs they occasion (e.g. "remoteness is measured only in the costs of overcoming the distance.")<sup>24</sup>

Given his ignorance of many market factors (i.e. 'imperfect knowledge') and most non-market factors (e.g. countervailing social costs<sup>25</sup>) and his restriction to a particular type of product and productive technique, how does an entrepreneur make a practical locational decision in the absence of arbitrary constraint (e.g. governmental interference)? The process of calculation is (or should be) governed by "the principle of *aggregate* transportation costs"<sup>26</sup> which denotes the search for the least-cost compromise between procurement transfer cost and distribution transfer cost.<sup>27</sup> Two aspects of this definition require elaboration. First the term 'compromise' indicates

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<sup>24</sup>M. L. Fair and E. W. Williams, *Economics of Transportation* (New York: Harper, 1950), p. 348.

<sup>25</sup>Hoover, *op. cit.*, ch. XVI.

<sup>26</sup>Fair and Williams, *op. cit.*, p. 349.

<sup>27</sup>Hoover, *op. cit.*, ch. III.

the dilemma faced by any firm; its dual nature as purchaser and vendor invariably causes it to be confronted with conflicting locational preferences<sup>28</sup> (a situation to which allusion has already been made). Secondly, the expression 'least-cost' emphasizes the previous cost-minimization assumption.

A recitation of its assumptions is almost enough to describe the operation of the model. In practice, the issue amounts to the selection by the firm of the site at which (given all the assumptions of the model) the aggregate of procurement (whether from one or several sources of supply), and distribution (whether to one or several major punctiform markets, or to an areal market) transfer costs are at a minimum. Of both these types of transfer cost one fundamental generalization can be made; each consists of the mathematical product of a certain number of transportation performance units (e.g. ton-miles) times the relevant per-unit transfer rates for the movements involved. While it is fairly obvious that the physical (i.e. transportation performance units) element of the transfer cost product is susceptible to manipulation, the question of applicable transfer rates is not nearly so simple.

In its simplest form, where a universal transfer rate (i.e. the same rate per ton-mile applies to the movement of

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<sup>28</sup>This refers specifically to the 'miles' component of the expression 'ton-miles'.

any commodity over any distance) is assumed, the model presents straightforward locational implications. Perhaps the best means of exploring these implications involves the use of a modified version of Weber's classification of materials.<sup>29</sup> For purposes of elaboration it is possible to divide inputs of raw or semi-processed materials into three principal categories: first, those which lose a substantial amount of weight in the productive process ('weight-loss' materials); second, those materials used in productive processes which rely heavily on ubiquitous substances - e.g. water in bottling plants - could be characterized as 'weight-gain' materials; and third, 'pure' substances which are used in productive processes involving neither gains nor losses in weight. It is even possible to further elaborate these distinctions by designing a weight-loss coefficient (which can be positive, negative, or zero, respectively) depicting the relationships between inputs and outputs.

When uniformity of transfer rates is added to the model's other assumptions, the firm seeking the optimum production site need pay attention to only one variable. As long as transfer rates are unaffected by any other changes in the physical nature, (e.g. in bulk, viscosity, volatility, and so on) of inputs relative to outputs or by changes in market prices per ton, the only significant variable is gross ton-miles, and the only means of altering

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<sup>29</sup> Fair and Williams, *op. cit.*, pp. 349-350.

it is by adjusting the materials source(s) - to - production site distance(s) relative to production site - to - market(s) distance(s). In all such adjustments, the objective is, of course to reduce gross ton-miles to a minimum.

The adoption of even more restrictive assumptions can permit the construction of more advanced locational models. Many of these models - e.g. Launhardt's Minimum Transport Cost Triangles and Weber's iso-cost diagrams<sup>30</sup> - possess the geometrical precision of the force vector models found in physics. In fact all of these models imply that - except under the most exceptional circumstances - the location of production must logically be at some point *intermediate* between the raw material source(s) and the market(s). However, the use of highly restrictive assumptions has proceeded far enough. Perhaps too far - since the two most crucial assumptions incorporated in the above analysis are among the least tenable. Specifically, the gross inaccuracy of the assumption of transfer rate uniformity will again be dealt with in the following paragraphs. Among other things, that discussion will cause the doctrine of the probability of the 'intermediate' production site to be substantially replaced by a more bipolar theory. But, the similarly unrealistic assumption of constant

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<sup>30</sup> Both Hoover and Losch mention these esoteric approaches.

"processing" costs need not be so elaborately refuted, for it is not the object of the paper to investigate production theory *per se*. Let it suffice, then, to point out the major qualification that "total costs may attract an enterprise to a favoured point even though neither production costs nor cost of distance is a minimum there provided that the sum of the two costs is a minimum."<sup>31</sup>

Ultimately, then, it is advisable to revert to Weber's materials classification and talk only in terms of locational tendencies. Thus a plant consuming "pure" materials will have considerable latitude in choosing a site (i.e. there could be a series of least-cost locations), provided of course that weight is the sole determinant of per-mile transport costs. For 'weight-loss' materials, however, a strong (depending on the size of the 'weight-loss coefficient') pull towards the materials source would exist, and a unique least-cost would be more probable. The opposite tendency would operate in the case of 'ubiquities'. Therefore, in conclusion, one can say little more than "The net result is to substitute articulate hesitation for inarticulate certainty."<sup>32</sup>

In any case this chapter does provide the basis for the more systematic discussions of costs, rates and their

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<sup>31</sup>Losch, *op. cit.*, pp. 24-25.

<sup>32</sup>B. Russell, *An Inquiry into Meaning and Truth* (London: Pelican, 1967), p. 9.

locational implications appearing in subsequent chapters.

This chapter's contribution to the testing of the hypothesis is thus a double one. First it describes the theoretical basis for the economic and geographic importance of transportation. Second, it indicates that the spatial influences of transportation rates on economic activity operate regardless of whether these rates are tied to costs. In other words, location theory does not require the basing of rates on costs.

## CHAPTER V

### LOCATION THEORY AND TRANSPORTATION

#### COSTS AND RATES

A criticism of the previous chapter's locational model and the lessons it yields might centre upon two of its salient features. One of these aspects is the isolation of transfer service inputs as the sole active determinant of the location of production of a manufacturing enterprise. For two reasons no substantial effort will be made to rectify this assumption. First, the *ceteris paribus* assumption is a device commonly used in economic models, and its appearance is no more pernicious here than elsewhere. Secondly, it is not within the scope of this chapter to do more than present the standard disclaimer offered by most location theorists in somewhat the following form:

Location, to be sure, is affected by other factors, often significantly. Differentials in labor costs in various areas, often quite persistent; differential availability of capital; the accumulation of skills in particular locations; the ties of one industry to another; the availability of sites, water supplies and other items; the general sociological environment; and numerous institutional factors such as tariff barriers, zoning restrictions, and the aides extended by communities to attract industry all have their effect. Moreover, much existing location is

primarily the result of historical accident

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The second questionable feature of the model was its failure to more realistically specify the nature of the cost-distance relationship. In other words, the question of the formation and character of transfer rates was insufficiently answered. This in turn cast doubt on certain implications of the locational model. It will be the intention of this chapter to remedy both these deficiencies.

The initial problem is that of describing the formation of rates. From the outset several factors must be borne in mind. First, the diverse nature of the inputs used by any major transportation concern makes it virtually impossible to assign to a theoretically typical movement its proper portion of cost, let alone to ascertain the 'true cost' of an actual movement. In fact, this circumstance invites tampering with rates, a practice made possible -, and in many cases - desirable by the monopolistic or oligopolistic environment enjoyed in the past by many carriers (especially railways).<sup>34</sup> Thus an arbitrary element of pricing policy must enter into the establishment of every rate.<sup>35</sup>

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<sup>33</sup> Fair and Williams, *op. cit.*, p. 349.

<sup>34</sup> R. L. Banks and Associates, "Study of Cost Structures and Cost Finding Procedures," Section 3, in *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1962) Vol. III.

<sup>35</sup> *Ibid.*; p. 155.

Nevertheless the role of costs in rate-making is of crucial importance. This contention is not difficult to support. In the first place, appropriate costs are held to be the criteria for rates by those theories of rate-making which stress allocational efficiency. Thus it has been said that:

if transportation rates are based on costs, shippers who try to minimize their own costs will choose as between competing modes of transportation the mode that can perform transportation for them at the lowest cost to society. Shippers also will be making the socially correct choice between transport-intensive and transport-minimizing methods of production.<sup>36</sup>

And in the second place, the question of costs is of major significance to any firm - whether privately or publicly owned - operating under commercial criteria. However, it is widely recognized that the costs considered by such a firm are not necessarily identical with social costs, since "the cost knowledge essential to carrier management relates primarily to expenditures of the transportation firm itself. . ."<sup>37</sup> Although it is correct in the case of railways to assert that the very significant gap between the long-run marginal cost and the short-run marginal cost (in this case 'variable cost') confers great latitude in individual rate setting upon the firm, the fact remains that the pressure to maximize profits or minimize

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<sup>36</sup> Lansing, *op. cit.*, p. 44.

<sup>37</sup> R. L. Banks and Associates, *op. cit.*, p. 155.

losses causes the general level of costs to be a major determinant of the general level of rates through the operation of internal cross subsidization.<sup>38</sup>

Finally, the advent of regulation has placed great - and perhaps inordinate - emphasis on the question of costs. This for several reasons. First, "cost calculations, because they involve mathematical processes, unfortunately create an illusion of precision. . .<sup>39</sup> Furthermore, the establishment of rates conforming to certain (and often vaguely defined) concepts of cost has frequently been a policy goal of regulating bodies.<sup>40</sup> Therefore, "in the quasi-judicial environment, cost becomes the one element of 'fact' which can be challenged, analyzed, and argued over."<sup>41</sup> However, the paradox exists that costs can 'legitimately' be cast up so as to advantageously support almost any proposition, thus making them fuel for almost any argument. This aspect, the controversiality of costs, will be more thoroughly discussed subsequently.

Perhaps the best way to deal in more detail with the influence which costs have on the intricate structure of transfer rates is to initially discuss the role assigned by

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<sup>38</sup> Meyer *et al.*, *op. cit.*, p. 6.

<sup>39</sup> R. L. Banks and Associates, *op. cit.*, p. 159.

<sup>40</sup> Meyer *et al.*, *op. cit.*, p. 2.

<sup>41</sup> R. L. Banks and Associates, *op. cit.*, p. 159.

theory to cost in the determination of the price of a transportation service. Such an introduction can then be modified by a discussion of some of the difficulties which surround the theoretical approach.

A transfer rate (which is the price of a particular service) performs two principal functions. It allocates (or, in the universal context of scarcity, rations) transportation services among prospective users, and it serves to compensate the carrier for the expenditures which the purchase of the factors required for production of its service cause it to incur.<sup>42</sup> The nature of the two functions makes it inevitable that a different 'interpretation' (or category) of cost be more relevant to the determination of the price best suited to performing each. In other words, the optimum price (in terms of the 'interest' of the general economy) under certain identifiable circumstances is that which corresponds to marginal cost. Furthermore, the term marginal cost in this context is not confined to those monetary costs actually encountered by the firm, but should comprehend all that is implied in the phrase 'marginal social cost'. With reference to the producer firm, however, the cost criterion usually adopted in price formation is that of average cost. Moreover, 'average cost' in this setting customarily refers only to monetary costs because of the fact that the gap (whether

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<sup>42</sup>Sampson and Farris, *op. cit.*, p. 7.

positive or negative) between total revenue and total monetary cost is the principal measure of the commercial success (and 'life' prospects) of the firm. When reference is again made to the assertion that prices perform two functions it can be seen that the function of 'rationing' is better performed by 'marginal cost prices' while that of 'compensation' is best performed by 'average cost prices' and that whenever marginal cost does not equal average cost a potential conflict exists.<sup>43</sup>

The case for marginal cost pricing deserves initial attention. This is so not only because of the emphasis placed by many theorists on the marginal equivalences required for static equilibrium, but also, paradoxically, because of the many weaknesses which detract from the marginal cost pricing argument.

Much of the literature on the question of marginal cost pricing is directed to the problems of controlling public enterprise. Nevertheless, much of the comment - especially that concerned with the demerits of marginal cost pricing - is pertinent to the case of publicly regulated commercial enterprise. With this in mind the following summary can be presented:

If optimum allocation and use of resources and their optimum standards of living are to be attained given the pattern of income distribution, the general rule of pricing requires that the

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<sup>43</sup>J. F. Due, *Government Finance* (Homewood, Ill.: Irwin, 1963), p. 403.

price be set at a level equal to marginal costs of production, provided that three requirements are met:

1. The marginal monetary costs of producing the service cover all marginal social costs; that is, there are no indirect costs to society, in addition to those directly incurred in producing the service.
2. There are no indirect community benefits from the service in addition to the benefits received directly by the users.
3. Prices are equal to marginal costs in other sectors of the economy.<sup>44</sup>

Many of the factors which compromise the theoretical desirability of marginal cost pricing, although mentioned above, deserve further attention. Perhaps the most serious demerit of marginal cost as a pricing criterion is that its validity is contingent upon its universality. As Little says: "The supposedly optimal character of marginal-cost pricing depends upon all the 'optimum' conditions being satisfied everywhere."<sup>45</sup> However, in view of the "obvious fact" that "price is not equal to marginal cost elsewhere," it is reasonable to conclude that "pure theory offers no guidance."<sup>46</sup> Under the circumstances it is of no avail even to attempt making the price: marginal-cost ratio in the industry in question equal to the average prevailing else-

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<sup>44</sup> *Ibid.*, pp. 297-398.

<sup>45</sup> I. M. D. Little, *A Critique of Welfare Economics* (Oxford: Oxford University Press, 1957), p. 185.

<sup>46</sup> *Ibid.*

where.<sup>47</sup> Moreover, even were the 'optimum conditions' in operation, the resultant situation might not be ideal, since "the question of income distribution is logically prior to the question of ideal output."<sup>48</sup>

The argument in favour of marginal cost is also harmed by problems of definition. One means of justifying the marginal cost concept is to say that if the price of any service equals its marginal cost, then the savings in cost resulting from the lapse of that service should equal the consequent loss in revenue.<sup>49</sup> Even were we to assume that the 'service' in question consisted of the movement of a given quantity over a given distance, the determination of a specific price equivalent to marginal cost would not be easy since ascertaining the monetary amount of marginal cost is plagued by several complications.

One of them is the time problem. The concept of marginal cost, being related to the ability of an enterprise to vary its inputs within specified periods is essentially a flow-concept. Since different types of factor inputs are variable within different time periods, the practical

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<sup>47</sup> *Ibid.*, p. 186.

<sup>48</sup> *Ibid.*, p. 188.

<sup>49</sup> This is the logical obverse of the definition of a 'marginal cost-price' as that "price equal to the value of the resources that must be used to provide the service into the future." See Lansing, *op. cit.*, p. 45.

definition of marginal cost is dependent upon the selection of an arbitrary time period. In the case of railways, for instance, several major time-period-defined interpretations of marginal cost exist; in a short period labor is the most variable input and expenditures on this factor constitute the principal element of marginal cost; in an intermediate period cargo vehicles and then tractor vehicles also become variable; finally, in the longer period, trackage and administrative expense can also vary with output levels.

Ordinarily the solution to this problem would be to use long-run marginal cost as the criterion of rate-making. By referring to the time interval in which all factors are variable and by setting rates to conform with long-run marginal cost (which is defined in terms of this time interval) the firm operating under conditions of perfect competition maximizes profit (or, as the case may be, minimizes loss).<sup>50</sup> In this situation, "Long run marginal cost ordinarily will be the same as full average cost, including the cost of facilities that have to be repaired or replaced."<sup>51</sup>

The use of long run marginal cost is, however, fraught with difficulty. First of all, in the context of the multi-product firm (and a railroad company can legitimately be included in this category since "ton-miles

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<sup>50</sup>Brennan, *op. cit.*, p. 178.

<sup>51</sup>Lansing, *op. cit.*, p. 45.

are far from homogeneous."<sup>52</sup>), the measurement of marginal cost is especially difficult. Not only does the time-interval problem remain, but it is also necessary to devise means of assigning the 'appropriate' portions of joint and common costs (more about these terms will be said later) to individual movements. The end result is that when common costs occur "marginal costs are then indeterminate; and even when there is only one product, they cannot be very precisely determined."<sup>53</sup>

Another consequence of adherence to long-run marginal cost - were it capable of being calculated with reasonable accuracy - as a pricing criterion is that such a policy would deprive carrier management of pricing flexibility. This is a two-edged argument. It is often pointed out with reason that "short-run marginal costs are substantially below total costs."<sup>54</sup> In such a situation it can be considered desirable to utilize what would otherwise be "idle capacity" by pricing below long-run marginal cost until such time as the amounts of fixed inputs can be

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<sup>52</sup> *Ibid.*, p. 54.

<sup>53</sup> Little, *op. cit.*, p. 194.

<sup>54</sup> Meyer *et al.*, *op. cit.*, p. 6. Sampson and Farris (*op. cit.*, p. 46) cite an estimate that only about one-third of railway total costs is variable with volume. An estimate by the MacPherson Commission of 40% can be inferred in the following statement: "The equitable contribution allowed by maximum rates should not be less than 150% of long-run variable costs." (*Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. I, p. 102).

adjusted to reduce or eliminate this "excess capacity." Under such circumstances the relevant short run marginal cost becomes the 'floor' for rate establishment. In fact, some theories of resource allocation propose that short-run marginal cost be the criterion of rate-making as long as excess capacity persists.<sup>55</sup> In addition, prices corresponding to short-run marginal cost are the minimum practical prices which firms faced with the prospect of not being able to impose higher prices (whether for competitive or other reasons) are likely to tolerate.

Such a procedure (i.e. the use of short-run marginal cost as a pricing guide) has several drawbacks. Were all prices to be set below long-run marginal cost, the result for the firm would be a shortfall of total revenue as compared with total cost, a situation which has serious implications for a firm's ability to attract replacement or growth capital. On the other hand, any attempt by the firm to remove a financial deficit caused by this pricing practice can have unfortunate repercussions. For if rates on certain movements are raised to the point where the receipts not only cover the full costs of these movements but also provide sufficient revenue to subsidize the continuance of those movements (e.g. backhaul) which do not (because of their low prices) generate enough revenue to cover their full costs, protests of economic discrimination

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<sup>55</sup>Lansing, *op. cit.*, p. 46.

arise. In other words, if a carrier seeks to establish a comprehensive scheme of internal cross-subsidization supported by price discrimination (often characterized as "'value of service' rate making") it encounters the following risks: first, the scheme (especially if it is very effective) may become politically untenable; second, nevertheless administrative convenience, inertia, and the pressures exerted by favoured customers can endow the scheme with considerable rigidity even when its commercial justification has vanished; third and finally, if the effectiveness of existing price discrimination practices is confounded by changes in traffic composition or by changes in the carrier's (in this case the example of railways comes to mind readily)<sup>56</sup> market power in various important market segments, the whole basis of internal cross-subsidization can disappear with the erosion of "contributing" traffic. Thus, whatever the overall implications of reliance on short-run marginal cost as a pricing criterion for overall resource allocation may be, it is widely felt that excessive reliance on short-run criteria constitutes commercial folly. This is the more dangerous edge of the two-edged sword.

I. M. D. Little presents two of the main objections to marginal cost pricing when he says "(a) that marginal cost is indeterminate and (b) that the instruction 'produce

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<sup>56</sup>*Royal Commission on Transportation, op. cit., Vol. I, p. 57.*

until price equals marginal cost' is administratively impossible. . ."<sup>57</sup> To these may be added the objection that in the case of railways, where unit costs (i.e. average costs) can accurately be said to decline over a very substantial range of output with increases in output,<sup>58</sup> setting price equal to long-run marginal cost can cause chronic losses. In other words, so long as the long-run average cost curve is declining, the long-run marginal cost curve lies below it, and the use of even long-run marginal cost (not to mention short-run marginal cost) as a pricing criterion will prevent total revenue from covering total cost.

Is the adoption of average cost as the standard of ratemaking then indicated? At least it can be said that insofar as long-run average cost is calculable its use is frequently deemed preferable to the use of long-run marginal cost and (especially) short-run marginal cost for three reasons. First the use of average cost may not only be more convenient in the accounting sense (although average cost in the multi-product context presents certain difficulties) but may also discourage potentially hazardous pricing practices. Secondly, the allocation of resources secured by average cost pricing need not in practice be any worse than that forthcoming from marginal cost pricing. Finally - and most

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<sup>57</sup> Little, *op. cit.*, p. 197.

<sup>58</sup> Meyer *et al.*, *op. cit.*, p. 4.

importantly - average cost pricing satisfies the important criteria of commercial viability. Specifically, the sale of each of the services offered by a firm at the true average total cost of that service ensures that the firm will be able to cover overall total cost without resorting to the wholesale use of price discrimination and internal cross-subsidization. Thus Little's conclusion that "nationalized industries should *at least* aim to cover total costs"<sup>59</sup> can be applied *a fortiori* to private enterprise (whether regulated or not). In this connection a cursory mention of the question of profits (note Little's emphasis on the phrase 'at least') should be made. On the one hand, a healthy level of profits is desirable to attract or generate internally the capital necessary for growth or modernization, especially in the railway industry which is quite capital intensive and tending to become more so.<sup>60</sup> On the other hand, the prevailing low rates of profits in railroading can be interpreted as indicating excess capacity in the industry, thus putting the need for growth in doubt.

The preceding discussion yields no irrevocable policy prescriptions. From it one can do no more than conclude that while marginal cost (in one or another of its variants) is the pricing criterion best suited to certain theories of resource allocation, most convenient in many

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<sup>59</sup> Little, *op. cit.*, p. 201.

<sup>60</sup> Sampson and Farris, *op. cit.*, p. 333.

competitive situations, and most likely to incur the favour of users, average cost remains the pricing norm most consistent with the needs of the railways. In practice, however, the correspondence of actual rates with theoretical norms is uncertain since the figures adduced as true costs are the products of the operation of accounting conventions on financial flows. At this point, therefore, an examination of actual costing procedures and problems is desirable.

Ideally, no matter what its intentions vis à vis the setting of prices, every firm wishes to know the exact future costs which it can expect to incur through the continuance or initiation of any particular service. Several characteristics of conventional accounting render the attainment of this objective exceedingly difficult. One of them is the time bias of business accounting. Although past costs form a valuable basis for estimating future costs, their extrapolation "may be of limited pertinence to the future,"<sup>61</sup> even when the *typical* past is considered.

Support is given to this contention by an examination of the principal railway expense categories. In analysing costs, three different time dimensions are discernible. Referring to their study of railroad cost characteristics, Meyer *et al.* state:

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<sup>61</sup>R. L. Banks and Associates, *op. cit.*, p. 158.

Costs of three different time dimensions are distinguished in the analysis: (1) direct expenses that vary closely with the quantity of output; (2) costs that vary with the principal fixed inputs and, depending on the particular character of the input, are fixed for varying periods of time; and (3) threshold costs that must be met before the lowest level of marginal costs can be attained. It is worth noting. . . that almost all railroad operating costs fall into either the first or third category; that is, costs are either directly variable with the quantity of output or otherwise are almost totally fixed threshold costs.<sup>62</sup>

The derivation of meaningful distance-related costs from the third category therefore depends on the adequacy of depreciation techniques, which unfortunately can be among the most arbitrary and distorting in railway accounting.

The nature of the relationship between output (or distance) and costs is thus conditioned by three factors. The first of them - which initially might not seem to be a legitimate interpretation of the term 'relationship' - is the extent to which railway managements believe costs are or should be variable with output. This factor will help determine which categories of cost will be adopted as pricing criteria in an unevenly competitive environment, i.e. which types of cost will for practical purposes be considered most immediately variable with output. In this area accounting convention possesses critical power of decree, since it determines not only the form and accuracy of the information conveyed, but also helps to impart a

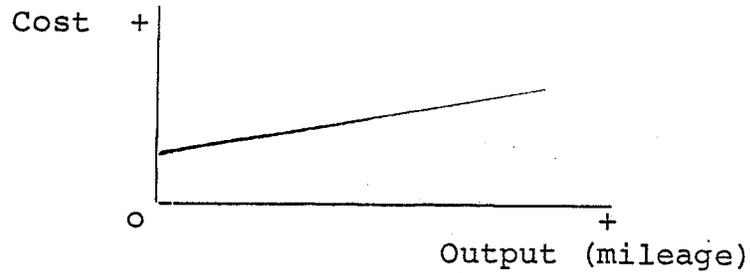
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<sup>62</sup>Meyer *et al.*, *op. cit.*, p. 45.

certain time bias.

A second important circumstance lies in the fact that not all types of expense are indeed variable with distance in a manner conducive to easy price formation. This is so for several reasons. In the first place, many expense categories are intrinsically unrelated to distance. An excellent example of this is the phenomenon of 'terminal costs' which while unaffected by the distance component of output does contain variable elements related to tonnage. Secondly, there is the question of discontinuities. While the amounts of certain types of expenses (e.g. fuel) can be responsive to even small variations in output, the relatively large and discrete units which characterize various other cost categories (e.g. vehicles of propulsion or carriage) preclude such responsiveness. Thirdly, the operation of joint costs (e.g. those occasioned by usually inevitable return journeys) poses conceptual difficulties for those seeking to deduce the costs of certain movements.

The final question is that of the proportionality of directly assignable variable cost to output. This question is best illustrated graphically. Were it possible to assume a constant proportionality of variable cost to output (most importantly - to the mileage component of output) the following type of cost - output relationship could arise:



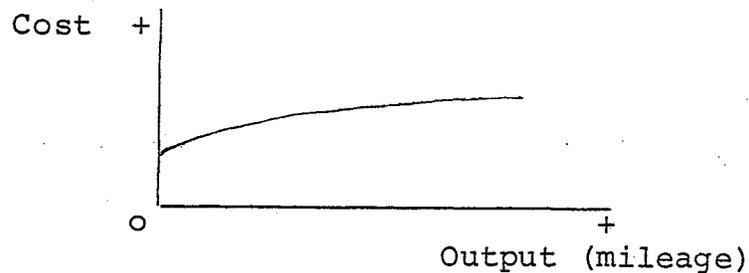
Two features of this diagram are noteworthy. First of all, the intersection of the function with a positive cost figure at zero output indicates that a certain level of cost must be covered before any particular transfer is performed. The phrase 'terminal cost' is commonly used to denote this situation but in fact, it comprises all elements of properly determined 'threshold' cost which are assignable to each particular shipment but invariable with mileage. Secondly the constant slope of the function indicates the apparently reasonable assumption that 'line-haul' costs are directly proportional to distance.

However, "most transport students and practitioners agree that line-haul-per-unit costs generally decrease as distance increases."<sup>63</sup> Therefore, "one cannot safely assume that all line-haul costs are directly proportionate to distance."<sup>64</sup> In other words, the above diagram must be modified as follows:

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<sup>63</sup> Sampson and Farris, *op. cit.*, p. 184.

<sup>64</sup> *Ibid.*



Given this basic relationship (i.e. that between distance and average full cost) a number of important qualifying factors remain to be discussed. The first of course, is competition. Two approaches can be taken to this question. On the one hand it is possible to assume a cost-based transfer price structure in which certain competitive circumstances constitute aberrations. In this case the basic rate-distance relationship would be the same as that depicted in the second cost-distance diagram above. However, wherever competition occurred its effects would be *reflected* by a jaggedness of the curve at the appropriate mileage point. For instance, if competition were to force a substantial rate reduction on certain movements so that the rate over X miles were lower than that over X-5 miles and also than that over X+5 miles, the curve would dip significantly at that point X.

On the other hand, if rate-making criteria other than cost are adopted, the average cost function depicted above becomes irrelevant because it does not even constitute a necessary standard of minimum rates. Such a development could be the consequence of the pattern of

reaction to unevenly pervasive competition. As a result the rate for the performance of Y ton-miles of transfer service is not predictable, being dependent on (a) the elasticity of demand for the item being transported, and (b) the degree of competition (intra-modal or inter-modal) in the carriage of that item between the shipment termini concerned.

A readily conceivable variant of the effect of competition on rates is the situation in which current competition is prevented from operating by the influence of regulation. Two types of rate regulation, both of which exist in Canadian experience, are possible. One is the establishment of certain rates by legislative enactment (e.g. the Crowsnest Pass Rates); the other is the discretionary power to approve or disapprove carrier-set rates given to legally constituted supervisory bodies. Both of these types of regulation can arise for a number of reasons, including: first, the desire to preserve or alter certain trading relationships; second, the desire to promote regional economic development by the manipulation of transfer charges; third, the necessity of conforming to international conditions; and fourth, the right of regulation granted by a carrier to government as a *quid pro quo* for certain other benefits. Although it applies to a great part of the Canadian rate structure, regulation often serves merely to sanction pre-determined rate changes (whose direction and magnitude may, however, have been conditioned

by a regulated environment); thus its power and directness is often less than its formal extent might suggest. This is especially true since the recent passage of the National Transportation Act.

A final factor affecting the relationship between carrier charges and distance is administrative expediency. Railway rate structures are customarily divided into mileage blocs (of varying lengths and containing indeterminate numbers of stops), and all points within any single 'bloc' (or mileage interval) as a rule receive the same rates on the same commodities. This practice owes its origin to the historical fact that neither costing knowledge nor market experience have offered precise general guidance as to what the relationship between rates and distance ought to be. Thus no practicable system has been developed to automatically adjust rates to distance. The alternative has been the erection of a structure of individually determined rates. The system of mileage blocs has therefore arisen in order to prevent an excessive proliferation of rates wherever the attendant increase in clerical costs was unlikely to be offset by the extra revenue attributable to a more elaborate rate structure. In other words the limits to rate proliferation were established by a rather clumsy balancing of marginal revenue and marginal cost.

Even were costs to provide an unambiguous guide to proper rate-distance relationships, many factors of the kind

mentioned above would conspire to frustrate the application of such guidance. This does not mean, however, that certain generalizations cannot be made about the relationship between rates and distance. For instance, Currie presents a specimen of a Class Rate (in this case, class 100) as developed under the "Uniform Scale of Mileage Class Rates. . ." promulgated by the Board of Transport Commissioners in 1955: -

Table 1

Distance (Miles)	Length of Mileage Block (Miles)	Increment per Mileage Block (Cents per 100 lb)
Minimum: 20	20	Minimum: 50
Over 20, up to 60	5	5
Over 60, up to 100	10	5
Over 100, up to 200	25	10
Over 200, up to 1500	25	9
Over 1500, up to 2700	50	16
Over 2700, up to 3300	100	14

This table well depicts the existence of mileage blocks of differing sizes. Moreover, a recasting of the same data provides the following table whose function is to illustrate the manner in which rates 'taper' (or, in other words, the way in which per ton-mile rates decline as the haul length increases):

Table 2

Mileage	Rate in Cents	Rate in mills per ton-mile
20	50	500
40	70	350
60	90	300
80	100	250
100	110	222
200	150	150
300	186	124
400	222	111
500	258	103
1750	348	93
1000	438	88
1250	528	84
1500	618	82
2000	798	80
2500	958	77
3000	1102	73

The only other major factor whose mention is necessary in order to understand the actual nature of transfer rates is aberrations, which, whether caused by competition or regulation, tend to disrupt the relatively simple patterns suggested by Currie's tables. For example, the longer is a line of railway, the more likely it is to have several major terminals on its length. Thus, depending on carrier pricing policy the rate on any commodity moving to or through any of these terminals may be radically influenced by the cost (e.g. transshipment expense or intermediate terminal expense)

and competitive circumstances which the existence of these terminals present.

The preceding discussion of the actual character of transportation rates has considerable relevance for location theory and those economic policies which might be derived from it. Together with two other factors it does much to vitiate the intermediate-point locational propensity mentioned previously. These two other factors are, first, the fact that any multi-input, multi-output firm is subject to varying prices (which in turn affect relative quantities) for all its inputs and outputs, and second, the fact that the economic 'surface of the earth' is not uniform but is variegated by many forces, one of the most important of which is the differing degree of development of the transfer network. Whenever it is possible to vary relative inputs and outputs, Hoover<sup>65</sup> has proved that material source or market orientations are favoured over intermediate points. In combination with the influence of the somewhat arbitrary patterns (at least from the viewpoint of many firms) of the transfer network and of the rate structures whose adherence to strict distance as the pricing criterion is irregular, this tendency is strengthened to the point where it is even possible to say that "the ideal location for a production process on the basis of transfer costs from a single

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<sup>65</sup> e.g. Hoover, *op. cit.*, p. 184.

material source and to a single market will generally be at either the source or the market rather than anywhere between."<sup>66</sup>

Because of this, the configuration of the transportation network and the transfer rates offered by its component firms can confer significant commercial advantages on certain locations. These locational advantages enjoyed by initially favoured areas or communities often tend to be reinforced and become cumulative. In addition these advantages can be more pronounced in an economy dominated by monopoly or oligopoly.<sup>67</sup> Their extent, furthermore, can be influenced by the general level of transfer rates and the pattern of differentials between the rates corresponding to varying distances. For all these reasons, rates, the basis of their formulation and the relationship among them, are contentious issues. The regulatory process is often the focus of this contention.

This chapter contains three significant points connected with the exploration of this paper's hypothesis. First, it indicates that cost is not the only variable influencing the formation of transportation rates. Second, in considerable detail it suggests that even when pressures

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<sup>66</sup> *Ibid.*, p. 31.

<sup>67</sup> Brennan (*op. cit.*, p. 274) notes that, "For purposes of oligopoly product pricing the minimization of locational differences is much like the minimization of other product differences."

to tie rates to costs triumph, there are major difficulties associated with the definition, identification and measurement of cost. Third, it emphasizes the preceding chapter's argument that the locational impact of the transfer system is transmitted by transportation rates, not transportation costs. To this end the chapter suggests some of the circumstances which vitiate cost as an unambiguous guide in the quest for the social optimum in transportation rates. Finally, it is possible to infer into the discussion of bipolar and cumulative locational influences the argument that the mere basing of transfer rates on costs would not necessarily produce a more geographically dispersed pattern of economic activity. This point is of particular interest in Canada because the dream of economic decentralization is frequently associated with the crusades for railway rate reform.

## CHAPTER VI

### SOME TRANSPORTATION IMPLICATIONS OF MACRO-ECONOMIC POLICIES

Preceding chapters have sketched in theoretical terms the part played by transportation in and its significance to the overall pattern of economic activity. Transportation also influences the manner in which this economic pattern changes. To the extent that transportation instigates or plays a major dynamic role in the evolution of the economic system, precision in the understanding of its dynamic influence is desirable. This aspect of the economic significance of transportation is susceptible to theoretical presentation in at least three particulars. The first involves manipulation of quantitative economic variables including levels of aggregate demand. The second deals with the related question of technological change. And the third item involves certain questions of economic development associated in part with the first two. Each of these three policy related areas will be treated on a theoretical basis in subsequent paragraphs.

It is now generally recognized that the economy of an advanced nation is not self-equilibrating. Most

reputable economists concede that the total amount of goods and services demanded can diverge from the total amount of goods and services the economy is capable of producing over a given span of time. The traditionally vaunted equilibrating mechanisms of price and interest rate fluctuations do not function automatically or satisfactorily to produce a desirable balance. Instead of these mythical guardians of economic equilibrium it has become accepted in theory and in practice that deliberate manipulation of the components of aggregate demand can serve as the balancing ingredient. Through the use of its wide range of fiscal and monetary tools and through its concomitant influence over levels of demand in the various sectors of its economy, a national government has the power to exercise a considerable degree of control over the short-run or long-run balance between aggregate supply and aggregate demand. That the systematic application of this power has become an accepted function of government is demonstrated by Galbraith's statement that: "in the wake of what is now called the Keynesian Revolution, the state undertakes to regulate the total income available for the purchase of goods and services in the economy."<sup>68</sup>

For example, in Canada since World War II efforts by the national government to influence the level of aggregate

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<sup>68</sup>J. K. Galbraith, *The New Industrial State* (New York: New American Library, 1968), p. 15.

demand in the national economy and its regional component sub-economies have become customary.<sup>69</sup> One of the primary ostensible goals of these efforts has been to stabilize aggregate demand at a point satisfactorily close to the economy's full employment potential, i.e. to procure (and hopefully to sustain by regular manipulation from period to period) a condition approximating full-employment equilibrium. In the sense that it links current attainment with existing potential within a relatively brief time span, the pursuit of full employment in any given period can be considered a short-run matter. Along with fiscal and monetary policy, government transportation policies involving intervention in the workings of the transportation system can play a discernible albeit minor role - a role susceptible to theoretical interpretation.

The demand for transportation services is a significant component of aggregate demand. In its efforts to influence the level of aggregate demand a government may have the power and inclination to influence the level of demand for transportation services. The most obvious way of doing so in the relatively short run is by causing price level changes. If with the instrument of transportation pricing policy the government can change the level of spending on transportation or on the goods and services

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<sup>69</sup> This topic is discussed in detail in: Economic Council of Canada, *First Annual Review* (Ottawa: Queen's Printer, 1964).

which are complements or substitutes for it, the larger objective of influencing the overall level of aggregate demand may in some measure be accomplished. In simplest terms the degree to which such initiatives will succeed depends on the significance of the transportation function and system in the particular economy, the elasticity of demand in the various markets for transportation, and the ability of the government to control transportation prices. Even if the effort is not conspicuously successful, it is apparent that in formulating transportation policy the government must be concerned with more than the immediate needs of the transportation system and its customers. Under circumstances where policies of controlling aggregate demand achieve prominence, decisions as to the quantity, quality, or price of transport services which it is within the public prerogative to make are likely to be made with a view to the level and stability of spending in the economy as well as to the interests (however defined) of the purchasers (direct or indirect) and suppliers of the services.

Public authorities charged with devising transportation policies consistent with the direction of aggregate demand are faced with decisions beyond those associated with the current level of spending on transfer services. Ultimately, the question of equilibrium is not simply one of balancing demand with a discernible and static supply limit. There is an important dynamic implication of the

equilibrating process. It arises when investment comes into play as a crucial demand variable subject to manipulation.

From the policy stand-point investment has two important characteristics. First, gross investment is an element of aggregate demand and hence susceptible to manipulation in the interest of, let us say, full employment. Second, net investment augments the economic capacity of the area in which it occurs and therefore shifts the targets at which economic policies are aimed. In both these senses investment in the transportation system is similar to most other types of investment.

In their treatment of advanced countries like Canada, even the most basic modern texts agree in emphasizing the importance of investment in bolstering aggregate demand. Thus, when Samuelson says that "the important factor in causing income and employment to fluctuate is investment"<sup>70</sup> his assertion is prescriptive as well as descriptive. The influence of investment expenditure directly on the mercurial capital goods industry (here the accelerator principle should be borne in mind)<sup>71</sup> and indirectly, through the multiplier, on the entire economy is of great significance. To the extent that investment policy is perceived as an essential part of policies to regulate aggregate demand and to the extent that government is

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<sup>70</sup> Samuelson and Scott, *op. cit.*, p. 237.

<sup>71</sup> *Ibid.*, p. 278.

particularly able to control investment levels in the transportation system, transportation investment can become a pivotal element of the economic equilibrium strategy.

If net investment occurs, whether as a consequence of deliberate attempts to control aggregate demand, or autonomously, there arise profound dynamic implications. Net investment increases the current productive ability of the economy. This accretion of capacity implies a self-renewing disequilibrium, especially if the economy is chronically subject to a "deflationary gap" and if investment policy is regularly used to combat that tendency.<sup>72</sup> Given certain assumptions about the permissible size of the public sector, the capital output ratio and the propensity to save, a certain rate of growth becomes a necessity rather than an optional goal, and the economy's need for investment can be insatiable.

When much of the net investment is concentrated in the transportation system the resulting increased capacity has special distinguishing characteristics. In part these characteristics are expressed by the associated concepts of

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<sup>72</sup>This phenomenon has been analyzed by many economists. It corresponds largely to Alvin Hansen's "warranted growth" concept. Looking at the symmetric counterpart of investment, savings, Galbraith expresses the problem thus: "here is the paradox of savings: the steps which insure that they will be used serve also to increase their supply. The more effectively they are offset by investment the higher will be the income and the more savings there will be." *op. cit.*, p. 55.

'producers interdependence' and 'external economies'. Both these concepts are discussed here strictly to clarify the character of transportation investment.

In the most general sense a condition of producers interdependence exists whenever the activities of one firm materially influence the activities of another firm or firms. Refining this theoretical generality, Tibor Scitovsky indicates two principal categories. The first exists "whenever the output. . .of a firm depends not only on the factors of production utilized by this firm but also on the output. . .and factor utilization of another firm or group of firms."<sup>73</sup> This category of producers interdependence is direct in character and technological in origin.

The second category embraces "interdependence among producers through the market mechanism,"<sup>74</sup> and is manifest "whenever the profits of one producer are affected by the actions of other producers."<sup>75</sup> In this category the nexus is pecuniary, but it is not direct in the sense that "direct" implies circumvention of the market mechanism. That this type of interdependence is ubiquitous is

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<sup>73</sup>F. Scitovsky, "Two Concepts of External Economies," in A. Agarwala and S. Singh (eds.), *The Economics of Underdevelopment* (New York: Oxford University Press, 1963), p. 298.

<sup>74</sup>*Ibid.*, p. 300.

<sup>75</sup>*Ibid.*

demonstrated by the following passage:

Expansion in industry A may also give rise to profits (i) in an industry that produces a factor used in industry A, (ii) in an industry whose product is complementary in use to the product of industry A, (iii) in an industry whose product is a substitute for a factor used in industry A, or (iv) in an industry whose product is consumed by persons whose incomes are raised by the expansion of industry A.<sup>76</sup>

To both these categories of producers interdependence the sometimes vague term "external economies" is applied, since, "It is agreed that they mean services rendered free (without compensation) by one producer to another."<sup>77</sup> There are, in other words, technological external economies and pecuniary external economies. Because technological external economies occur only rarely, they are in Scitovsky's treatment - as in most general discussions of economic development problems - customarily ignored or submerged in the larger category of pecuniary external economies.

From a policy standpoint the significance of interdependence and external economies lies in the fact that they exemplify "the Pigovian divergence between private and social marginal net product."<sup>78</sup> Although they entail social

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<sup>76</sup> *Ibid.*, p. 305.

<sup>77</sup> *Ibid.*, p. 295.

<sup>78</sup> P. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe," in Agarwala and Singh, *op. cit.*, p. 248.

benefit, external economies do not directly benefit the firms in whose operations they originate. In theoretical terms the situation is one in which social marginal net product exceeds private marginal net product. Put another way, the divergence creates a policy problem because "when an investment gives rise to pecuniary external economies, its private profitability understates its social desirability."<sup>79</sup> Thus, where external economies are in evidence and where ostensible private profitability guides investment decisions (whether in the public or the private sector) investment will likely be deficient by social standards. According to Rosenstein-Rodan this deficiency has several aspects: a lesser rate of investment, a smaller absolute amount of investment; and a different pattern of investment.

Scitovsky summarizes the problem by saying "profits in a market economy are a bad guide to economic optimum as far as investment and industrial expansion are concerned; and they are worse, the more decentralized and differentiated the economy."<sup>80</sup> This denunciation suggests the justification of a role for government in undertaking and guiding investment - a role which is recognized in the concept of social overhead capital.

So wide and widely current an idea as social over-

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<sup>79</sup> Scitovsky, *op. cit.*, p. 304.

<sup>80</sup> Scitovsky, *op. cit.*, p. 305.

head capital is often carelessly or vaguely defined. In the latter sense Hirschman's effort is worth citing: "SOC [sic] is usually defined as comprising those basic services without which primary, secondary, and tertiary productive activities cannot function. The hard core of the concept can probably be restricted to transportation and power."<sup>81</sup>

More specifically, social overhead capital is generally considered to possess one or more of the following attributes:

- it is relatively indivisible into small units;
- it is characterised by increasing returns to scale over a significant range of output;
- it is associated with external economies (especially in the broad or "pecuniary" category cited by Scitovsky);
- its provision by government is traditional.

Clearly in the case of Canada's railways all four of the attributes are to some extent evident. Some of the major policy implications of each of these attributes are worth considering.

Whether by virtue of indivisibility or increasing returns or both,<sup>82</sup> investment in railway transportation

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<sup>81</sup>A Hirschman, *The Strategy of Economic Development* (New Haven: Yale University Press, 1958), p. 83.

<sup>82</sup>The two attributes are frequently treated as corollary.

usually entails the expenditure of vast sums over substantial time periods. The risk is high. Should the current size of the railway transfer service market be insufficient to fully exploit the potential of increasing returns, deficits may arise. In Canada most railway construction and much railway operation have benefited from various government subsidies or guarantees.

Net investment increases an economy's productive capacity and can alter the geographic distribution of that capacity. The nominal or isolated productive capacity increase caused by any particular investment project can be considerably amplified by external economies accompanying the project. This amplification may be perceived without being precisely measured or exactly understood. Significant benefits of the external economy variety have long been attributed to Canada's railways and this attribution has had policy consequences.

Beyond the immediate productive capacity increases imputed to a direct social overhead capital investment, further increases can occur. One investment can result in a series of followers: the disequilibrium created by the initial investment can result in a sequence of subsequent investments tending to restore equilibrium. Hirschman, a leading proponent of this theory of development, depicts the process as follows:

development has of course proceeded in this way, with growth being communicated from the leading sectors of the economy to the followers; the balanced growth that is revealed by the two still photographs taken at two different points in time is the end result of a series of uneven advances . . . . The advantage of this kind of seesaw advance over "balanced growth" where every activity expands perfectly in step with every other is that it leaves considerable scope to *induced* investment decisions and therefore economizes our principal scarce resource, namely genuine decision-making.<sup>83</sup>

To those who, like Hirschman, believe that "the essence of development strategy consists in maximizing induced decision making" this theory is understandably attractive. Moreover, it is of great comfort to those convinced of the value or sanctity of the mixed economy.

In certain ways social overhead capital seems eminently suited to be one of the leaders in Hirschman's process. The main advantages claimed for social overhead capital are probably genuine but definitely not unqualified. First it is by now in Canada a virtually undisputed right (or as some would have it, duty) of government to closely supervise if not actually control social overhead capital investment, especially in the hitherto crucial area of railway transportation. To the extent, then, that social overhead capital can assume a role of leadership, government can provide the animus of development. The problem, however, is that the ability of social overhead capital investment to

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<sup>83</sup>Hirschman, *op. cit.*, pp. 62-63.

secure a following is unsure. Hirschman himself notes that defect when he concedes that "SOC capacity is essentially permissive."<sup>84</sup> Therefore even a substantial social overhead capital investment such as the installation of a modern railway system cannot guarantee that any subsequent enduring development will have whatever specified quantity, quality, or geographic distribution. To induce is not to compel; according to some, not to compel is to fail.

The fact that such social overhead capital as transportation infrastructure is characterized by significant external economies is considered to be another development leadership advantage. Not only does the apparent availability of external economies constitute a major part of the initial inducement to invest, but from a social point of view a sufficient volume and kind of induced investment may ultimately internalize the external economies and thus eventually restore that balance between private profitability and social desirability which is theoretically disturbed by external economies. Hirschman voices this contention:

the expansion of industry A leads to economies external to A but appropriable to B, while the consequent expansion of B brings with it economies external to B but subsequently internal to A.<sup>85</sup>

Despite all this, there is a problem. The presence

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<sup>84</sup> *Ibid.*, p. 93.

<sup>85</sup> *Ibid.*, pp. 66-67.

of external economies may accelerate the rate of investment but it can have objectionable effects on the geographic distribution of that investment. The regional dispersion of investment and economic activity can be impeded. Hirschman also recognizes this major weakness of the permissive approach implicit in the reliance on government-guided social overhead capital as the investment leader:

. . . investors spend a long time mopping up all the opportunities around some "growth pole" and neglect those that may have arisen or could be made to arise elsewhere. What appears to happen is that *the external economies due to the poles, though real, are consistently over-estimated by the economic operators.*<sup>86</sup>

In the case of transportation this condition is exemplified in the cumulative nature and geographic concentration of transfer advantage noted by many location theorists and mentioned earlier.

Under certain circumstances the single operation of any of the cited attributes of indivisibility, increasing returns or external economies might of itself justify a substantial degree of government intervention in the railway category of social overhead capital. In Canada the even more powerful attribute of tradition often guarantees intervention which might not otherwise occur. For over a century railways have been esteemed an integral component of our communications system which in turn has been deemed to possess special military, political and social importance in

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<sup>86</sup> *Ibid.*, pp. 184-185.

addition to its fundamental economic significance.

Tradition has been perhaps the most persuasive attribute of this type of social overhead capital in Canada.

This chapter has presented yet another area of goals which control over railways might be used to attain. The accompanying discussion of the circumstances associated with these goals implied that cost-based rate regulation could be considered secondary to or incompatible with them. This implication emerged clearly from the discussion of externalities versus internalities. Wherever efforts are made to exploit externalities it would be questionable to base rates solely on privately incurred monetary costs.

## CHAPTER VII

### TRANSPORTATION AND TECHNOLOGICAL CHANGE

Besides being a significant item of social overhead capital a major transportation investment such as a railway system is the embodiment of a certain technology.<sup>87</sup> From policy-makers technology demands attention because it is capable of influencing the way in which the pattern of economic activity changes.<sup>88</sup> If technological change is defined as the time process by which relatively greater output can be obtained from the same relative amounts of inputs its economic implications are clear.

The close theoretical relationship among invention, net investment, innovation, and technological change is widely recognized<sup>89</sup> although various theorists differ in the matter of emphasis, frequently using Schumpeter as the focus of their disputes. Whether and under what circumstances

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<sup>87</sup>Galbraith offers the following typical definition: "Technology means the systematic application of scientific or other organised knowledge to practical tasks" (*op. cit.*, p. 24).

<sup>88</sup>For instance, see Samuelson and Scott, *op. cit.*, pp. 223, 246, or 283.

<sup>89</sup>For example, *Ibid.*, p. 280.

technological change instigates or merely transmits the impulses of economic "progress" it is evidently a variable of some importance. Even the basic texts sing its praises. Samuelson, for instance, says that "scientific and engineering progress has been quantitatively the single most important factor for growth in the advanced countries."<sup>90</sup> He attributes to technological advance both preponderant responsibility for American productivity increases<sup>91</sup> and the ability to offset the tendencies to diminishing returns and profits which would triumph in its absence.<sup>92</sup> The Economic Council of Canada echoes these convictions. In its First Annual Review the Council asserts that in this country's economy the influence of technology incorporated in labour is intimately linked with the influence of technology incorporated in capital and that the combined influence is of great significance.<sup>93</sup> In the same vein the Council's Fourth Annual Review (1967) attributes more than one-half of recent and projected real output per person employed to a "residual" factor of which technology is an important element.<sup>94</sup>

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<sup>90</sup> *Ibid.*, p. 785.

<sup>91</sup> *Ibid.*, p. 788.

<sup>92</sup> *Ibid.*, p. 776 and p. 784.

<sup>93</sup> Economic Council of Canada, *op. cit.*, p. 155.

<sup>94</sup> Economic Council of Canada, *Fourth Annual Review* (Ottawa: Queen's Printer, 1967), p. 95. The relevant table and portion of explanatory text are worth noting: see Appendix "A".

When technological change in the sense defined above occurs in the transportation system whether through capital investment or through improvements in the quality of labour or management, cost savings can result. Abstracting from the market power of the operators of the system these savings offer the alternative possibilities that greater output can be provided from a given level of inputs, or that the same level of output can be secured from a lesser appropriation of society's scarce resources. To the extent that transportation is a factor of production and to the extent that consequent cost savings are passed on, technological change in the transportation system can create cost savings for purchasers of transfer services. Finally, because the economic influence of transportation is so pervasive, technological change in the transportation industry can conceivably spur technological change elsewhere. Thus, policymakers have a three-fold interest in transportation technology; because it influences costs and efficiency in the transportation system; because it influences costs and efficiency in user industries; and because it influences the general technological climate.

The bulk of this chapter admittedly plays a small role in advancing the argument that cost-based rate control is not the sole theoretically justifiable *raison d'être* for transportation (railway) regulation. In fact the chapter suggests that the benefits of technological change in

transportation are transmitted to the rest of the economy when transportation industry cost levels influence transfer rate levels. This transmission does not, however, require the tying of each individual rate to cost.

## CHAPTER VIII

### TRANSPORTATION AND ECONOMIC PROGRESS

Even if it is not possible to precisely define the relationship between transportation and economic progress, it is possible to assert that the relationship will be accommodated within and influenced by the structure and performance of the transportation industries. An effort will be made in this chapter to explore certain theoretical aspects of transportation industries structure and performance, with particular emphasis on railway industry structural characteristics. In so doing it will suggest several of the ambiguities, undesirable implications and practical difficulties attending railway rate regulation based exclusively on cost.

What is the relationship between railway transportation and "economic development" - that potently suggestive term embracing so many conceptions<sup>95</sup> of Utopia? As this

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<sup>95</sup>There is no consensus among economic theorists which would permit the definition of economic development in terms of a uniquely satisfactory set of operations for economic advance. Even in its economic foundations development theory is therefore more descriptive than prescriptive. In addition many theorists contend that the economic aspect of development is inextricably bound to social, cultural and political aspects, and can only be understood in their

Part has attempted to show, it is demonstrable that railways can accomplish or contribute to the accomplishment of the following things:

- (1) the location of economic activity or changes in its geographic distribution;
- (2) changes in price levels;
- (3) influencing the state of technology;
- (4) changes in the quantity or quality of investment.

All of these things are significant but neither individually nor collectively need they constitute "economic development" as long as the essential criterion of that concept is the requirement of a significant and enduring increase in real per capital income. It is even debatable that railways' accomplishments necessarily promote economic growth. The fact remains that there is more than enough evidence to indicate a reciprocal relationship between the development of the transportation system (including its railway component) and the general progress of economic activity. This fact must be given prominence by regulators and policy-makers.

Other chapters - notably those connected with rate formulation and locational models - contain allusions to the state of competition in the market for transfer services.

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combined context. For instance, R. Nurkse, *Problems of Capital Accumulation in Underdeveloped Countries* (Oxford: Basil Blackwell, 1953), p. 157, offers the conviction that "the advancement of the backward countries is far more than an economic problem."

The transportation market is not monolithic. It is readily divisible in a number of ways. One way is to divide the overall market into its component modal markets. Of these the market for railway services has great prominence. In Canada it is characterized on the supply side by monopoly and oligopoly.

Monopoly is an economic phenomenon with a distinct meaning. The same can be said for the allied phenomenon of oligopoly. Both their meanings are described by an established body of theory. Elements of this theory are of great value in understanding the transportation policy implications of monopoly and oligopoly.

Monopoly is the market situation in which there is a single seller. The theoretical economic significance of this situation lies in the power of the seller, the monopolist, to control his price and output. To the economist this power is expressed by the familiar oblique demand curve, the market demand curve being the one facing the monopolist. To the layman and his elected representative this power can also signify a type of market dominance with potentially serious social and political overtones.

Economic theory asserts that "the monopolist simultaneously determines both output and price."<sup>96</sup> Such behaviour can be found objectionable for two reasons. First it can, but need not, produce profits which, either in their

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<sup>96</sup>Brennan, *op. cit.*, p. 223.

amount, or their rate, or their duration, society considers excessive. As Brennan says: "Ability to exert control over the product price does not guarantee the monopolist a profit. Whether profit is made or not depends upon the relationship between demand and the monopolists' cost conditions."<sup>97</sup> The second reason is concerned with resource allocation. Mention has already been made of the allocating function of prices - a function which obtains even when the price-setter is a monopolist. To the extent that the monopolist is guided solely by the desire to maximize his profits and to the extent that he possesses accurate knowledge of the cost and revenue curves he faces, he will choose to produce output to the point where his marginal revenue equals his marginal cost. At the same time the monopolist will use his knowledge of his demand curve to select the price on that curve at which the entire amount of output prescribed by the conjunction of marginal cost and marginal revenue will be absorbed by the market. Because the oblique nature of the demand curve connotes the divergence of marginal revenue from average revenue, price will never equal marginal revenue if the conventions of monopoly price theory are observed. Therefore, as long as the monopolists' output decisions produce an equality between marginal cost and marginal revenue, price will seldom equal marginal cost. Furthermore, price will equal

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<sup>97</sup> *Ibid.*, p. 225.

average cost only under peculiar circumstances. This discrepancy between price on the one hand and marginal revenue and sometimes marginal cost and average cost on the other creates conditions of resource allocation which offend against those theories which stress as the basis of optimal resource allocation the equality at least of price and marginal cost let alone also of marginal revenue and average cost. In other words economic theory suggests the likely failure of monopoly to conform to certain theoretically derived normative standards of resource allocation.<sup>98</sup> Of these standards more will be said, but it is the tendency of monopoly to produce less and charge more than they allow. This tendency has prompted Brennan to say that even in the long run "it is accidental that profit-maximizing output is also optimum output."<sup>99</sup>

In theory, prices, output and profit are not the only aspects of monopoly that might be expected to clash with accepted norms. One might also contend that it will be in the interest of the monopolist to retard technological progress in his industry. What is worse - or at least less readily defensible - is the contention that monopoly and its attendant abuses are avoidable economic phenomena; that a monopoly is artificial - a combination produced and maintained by conspiracy and depredation, and having no

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<sup>98</sup>Singer, *op. cit.*, p. 21.

<sup>99</sup>Brennan, *op. cit.*, p. 228.

justification beyond the avarice of its creators. As a popular historical generalization this accusation may have some validity; as a specific indictment of Canada's railways it is wanting. Alluding to the already cited concept of "natural monopoly", Brennan says:

However, it is not necessary that competition be prevented by a conscious device. The size of the market may not be sufficient to support two profitable firms. An additional firm might force total revenue below total cost for both firms.<sup>100</sup>

In the case of railroading this tendency to "natural monopoly" is reinforced by the "natural"<sup>101</sup> barrier of capital requirements which are high not only in absolute terms but also relative to market size. Thus to the extent that any railway enterprise is a natural monopoly its existence cannot be accurately represented as a parasitic conspiracy and its actions are not necessarily economic or social transgressions.

To the policy-maker hoping to apply it, the theory of monopoly therefore presents many practical ambiguities. It is simply not sufficient to perceive that a particular railway is the only rail carrier serving a certain market. Many other questions must be asked and answered. If, as appearances would indicate, the railway possesses a monopoly, is it of the "natural" variety? Whether or not

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<sup>100</sup>*Ibid.*, p. 217.

<sup>101</sup>*Ibid.*, p. 253.

the monopoly is "natural" by what normative standards should its profits and the quantity, quality, and price of its output be judged? If the standards are being violated, to what extent are the violations uniquely attributable to the monopoly, and in any case, to what extent, by what means, and at what cost are they remediable? It will be shown that monopoly theory can do little more than suggest the questions, its ability to answer any but the first being limited.

Similar perplexity attends oligopoly, a form of structure prevalent in the railway industry. Questions about price, output, innovation, and normative standards raised with respect to monopoly must also be applied to the operation of oligopoly. Many of the questions are the same, but the answers need not be.

Economic theorists assert that the difference between monopoly and oligopoly is not just a matter of numbers.<sup>102</sup> The theory of monopoly is detailed, explicit, and essentially unitary; that of oligopoly, disparate and sometimes contradictory. For that reason oligopoly theory

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<sup>102</sup> Nevertheless theorists are by no means unanimous in ascribing significant distinction to oligopoly. Galbraith (*op. cit.*, p. 195) minimizes the differences between monopoly and oligopoly by saying, "The conflict between the legal condemnation of monopoly and its *de facto* acceptance, in slightly imperfect form as oligopoly, is stark." From a practical viewpoint his statement certainly has merit, and is attested by the growth of intermodal competition in the transportation world.

is also of interest in this chapter.

An oligopolistic industry contains a relatively small number of firms. Firm size is therefore large relative to overall market size and the stern discipline of the horizontal demand curve is missing. Implicit in this condition is a degree of latitude in decision making for the individual firm. Actually "decisions of sellers are mutually interdependent."<sup>103</sup> This interdependence influences the economically significant decisions made by the firm.

In the area of price and output theory oligopolistic interdependence is expressed by a number of alternative hypothetical models.<sup>104</sup> Each of these models postulates a different scheme of price determination, but the common thread linking all of them is the absence of that inexorable competitive pressure pushing price towards a floor dictated by cost (whether marginal, or average, or both).<sup>105</sup> To the policy maker as well as the regulator this situation has two implications already encountered in the case of monopoly. First, especially if some form of collusion enters the price determination process, oligopoly is open to the accusation

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<sup>103</sup> Brennan, *op. cit.*, p. 235.

<sup>104</sup> See, for instance, Singer, *op. cit.*, p. 81 *et seq.*

<sup>105</sup> Emphasis on such non-price competitive devices as product differentiation is a familiar feature of oligopoly.

of jointly selecting high prices and profits, and correspondingly lower output.<sup>106</sup> Since the terms "high" and "lower" are relative and implicitly normative, the first point is necessarily derived from the second. This latter point is that the oligopoly price, like the monopoly price, need never coincide with marginal cost. Thus, when Samuelson says, "It is not the profit a monopoly makes that constitutes its greatest evil, but rather its tendency to set too high a price in relation to social marginal cost pricing,"<sup>107</sup> this same charge can frequently be levelled against oligopoly.

Oligopoly also stands accused of inhibiting innovation. Although Schumpeter's contention that large firms are great innovators is well known, many theorists argue the opposite case. Witness Singer's remarks in this connection:

But it can be argued with equal cogency that in concentrated industries in which the leading companies have substantial market power, the environment breeds stagnation, it lacks the pressure to develop new products and innovate.<sup>108</sup>

As with its performance in the areas of price and output,

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<sup>106</sup> e.g. Brennan's statement (*op. cit.*, p. 248) that "Long-run output and long-run profit possibilities under oligopoly depend essentially upon the ease or difficulty with which new firms can enter the industry."

<sup>107</sup> Samuelson and Scott, *op. cit.*, p. 536.

<sup>108</sup> Singer, *op. cit.*, p. 6.

oligopoly's innovation tendency is subject to scrutiny and even suspicion on the *prima facie* basis that existing theory suggests no automatic guarantees of socially satisfactory performance.

Just as conspiracy is often inferred in the advent of monopoly, collusion is often inferred in the evolution of an oligopolistic industry structure. Yet, like a monopoly, an oligopoly can be more than an artificial creation sustained for profit in defiance of economic and social laws. Economic circumstances can justify or at least mitigate the existence of oligopoly. In a given industry, economies of scale may exist over so great a range of output that the relatively efficient operation of more than a handful of firms is effectively precluded. An entry barrier such as that constituted by heavy capital requirements can exist with a similar numbers-limiting effect. Such industrial circumstances could suggest that there is such a thing as a "natural oligopoly" as well as a "natural monopoly." In neither case can the policy-maker approach the industry with the preconceived notion that structural reform (fragmentation or dismemberment) must be the remedy for alleged malfeasance.

When the railroad industry is discussed, allusion is frequently made to both monopoly and oligopoly. This may seem paradoxical because an industry structure cannot be both simultaneously. The solution to the paradox lies in

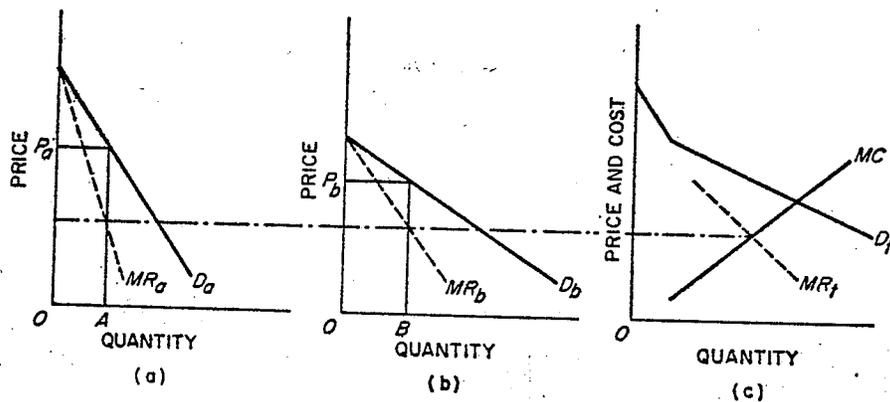
definitions of the market. While there is evidently an overall market for railway transfer services, this encompassing market can be conceptually and practically divided into any number of sub-markets on a geographic or commodity basis. Thus, while oligopoly may prevail in the overall market, monopoly may reign in certain sub-markets.

For the same reason a particular railway enterprise may operate in a considerable number of identifiable sub-markets, experiencing oligopolistic conditions in some, and possessing monopoly power in others. Since arbitrage of transfer services is impossible any such enterprise exercising monopoly power in more than one sub-market will be strongly tempted to implement a policy of price discrimination in those sub-markets in which the elasticity of demand for its service differs. Singer offers the following depiction of the standard theoretical model of price discrimination:<sup>109</sup>

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<sup>109</sup> Accompanying the diagram is his description of its operation, *viz*:

The horizontal addition of the marginal revenue curves  $MR_a$  and  $MR_b$  gives  $MR_t$  and the horizontal addition of  $D_a$  and  $D_b$  gives  $D_t$ . The profit-maximizing output for the discriminating monopolist is determined by the intersection of the marginal cost curve for the entire output (MC) and the combined marginal revenue curve ( $MR_t$ ). A horizontal dotted and dashed line connects all three diagrams . . . at the level where the marginal revenue of the discriminating monopolist in market A is equal to its marginal revenue in market B and its combined marginal revenue curve ( $MR_t$ ) is equal to the marginal cost curve for the entire output (MC). It follows from the analysis that the profit-



Monopolistic price discrimination adds another element to the already complicated picture of transfer service pricing, allusion to which has already been made. Ironically, price discrimination both exacerbates and alleviates the problems of railway pricing policy. It alleviates them because in those sub-markets where - assuming a satisfactory system of imputation - total revenue exceeds total costs, the financial resources are generated to sustain a scheme of internal cross-subsidization within the enterprise. For enterprise management the operation of such a scheme effectively means that, as long as the firm receives enough revenue from all sub-markets to cover its variable costs in all its sub-markets, it need not tackle

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maximizing quantity in market A should be  $OA$ ; and in market B,  $OB$ . At these respective outputs, the discriminating monopolist will charge  $OP_a$  in market A; and a lower price  $OP_b$  in market B.

Singer, *op. cit.*, pp. 185-186.

the complex and practically insoluble problem of determining true costs in each sub-market and aligning rates with them. By the same token, however, internal cross-subsidization, with its concomitant emphasis on demand or "value of service" in rate-making, can ultimately exacerbate the problem of railway pricing by so depreciating cost as a pricing criterion that the enterprise gradually loses touch with the economic realities of many of the sub-markets within which it operates. Thus a railway enterprise which avails itself of monopolistic price discrimination achieves greater latitude in setting individual prices, but at the same time runs the risk of erecting an elaborate structure of prices whose purpose is not to establish any definable sort of relationship between input and output in the various sub-markets but rather to maintain the financial health of a system of internal cross-subsidization.

Allegorically speaking, it would not be unfair to say that in the railway industry, internal cross-subsidization involves the use by a firm of the monopoly power it possesses in some sub-markets as a crutch to help support it in those other sub-markets in which it encounters oligopolistic conditions or inter-modal competition.<sup>110</sup> Unfortunately, the crutch is wobbly, being subject to two

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<sup>110</sup>The particularly capital-intensive structure of railways with its implication of average costs greatly in excess of short-run marginal costs, creates considerable opportunities for discretionary competitive price-cutting.

major weaknesses. One of these weaknesses involves an argument in equity. It is possible to argue that a system of internal cross-subsidization within a firm entails a parallel external system of cross-subsidization among the firm's customers, and that this external system is unfair or socially undesirable or both<sup>111</sup> because those consumers who pay a price which is high in relation to the cost of producing the service they consume may be considered to subsidize those consumers who pay a relatively lower price. In such a case the firm stands accused of arrogating unto itself arbitrary tax-like powers,<sup>112</sup> which may, in addition to implying other abuses, become weapons of unfair competition.<sup>113</sup>

The second major weakness in the use of internal cross-subsidization as an entrepreneurial crutch lies in the risk of erosion of the firm's monopoly base. The extensive occurrence of such a development is remarkable in the case

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<sup>111</sup>It may be both "unfair" and socially desirable. Phillips (*op. cit.*) asserts on his page 307 that "discrimination is often socially desirable" citing as benefit the advantages of fuller usage of a service and lower overall prices, and, on his page 131, as reason, "conditions of decreasing costs."

<sup>112</sup>Accusation is not conviction. Phillips (*op. cit.*) points out on his pages 368-370 that even in the United States the legal prohibition of price discrimination is highly qualified. On his page 368 he specifically states in this connection ". . . years of interpretation have failed to witness the development of any clear principles by which a rate structure may be judged as reasonable or unreasonable."

<sup>113</sup>See, for instance, Singer, *op. cit.*, p. 261.

of railways.<sup>114</sup> That it has happened with dramatic impact in Canada is amply documented in the papers of the 1961 MacPherson Royal Commission<sup>115</sup> although at that time a considerable residual base for monopolistic price discrimination and internal cross-subsidization was believed to persist.<sup>116</sup> Similar conditions are discernible in the U.S.<sup>117</sup> When the foundations upon which a system of internal cross-subsidization rests collapse the efforts to sustain it can become desperate and futile.<sup>118</sup>

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<sup>114</sup>Singer's comment (*op. cit.*, p. 64) on this matter is worth noting: "Chamberlin observes that a firm with a declining demand curve may face competition from other firms with similar although not identical products. All products have some type of substitutes either close or imperfect. This continuum of substitute products results in all industries shading into each other; therefore, the case of pure monopoly, in which by definition all substitutes are excluded, is impossible." This observation is pertinent to the railway's dilemma; their cost characteristics may be those of natural monopoly, but their product characteristics are not.

<sup>115</sup>See for example, Carr, *op. cit.*, pp. 23-37.

<sup>116</sup>This can be inferred from Carr's statement (*op. cit.*, p. 53) that "there is good evidence that for some traffic the railways are not providing the cost competition they are capable of. . ."

<sup>117</sup>Phillips, *op. cit.*, p. 321.

<sup>118</sup>The Canadian experience of this collapse and its consequences is described by A. W. Currie, *Canadian Transportation Economics* (Toronto: University of Toronto Press, 1967), pp. 13-14:

. . .by 1955 and certainly by 1958 it was becoming clear that for all practical purposes many non-statutory railway rates, as well as passenger fares, had nearly reached their economic ceiling. They could not be increased without diverting traffic to competing agencies or choking off long-haul freight

Many as are the objections to it, internal cross-subsidization - whether supported by flagrant price discrimination or not - cannot readily be discarded.

Whatever the justification - maintaining an efficient level of production, broadening a sales base for protection against seasonal fluctuations, anticipating future company growth - the practices of any firm reflect instances of subsidization, in one form or another, in almost every facet of its business behaviour.<sup>119</sup>

In spite of the conceptual homogeneity of transfer services a modern railway must be considered a multi-product enterprise.<sup>120</sup> The complexity of contemporary railroad costing and operations virtually compels the use of internal cross-subsidization. Adoption of Galbraith's view of prices

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because shippers were unable to pay higher transportation costs and still sell their goods in distant competitive markets. The possibility of increase was still further reduced when the prices of some agricultural products began slowly to recede from their post-war peaks or were in danger of doing so. As soon as some freight rates reach their economic ceiling, it becomes apparently unfair and even oppressive to raise other tolls whose economic ceiling may be higher. Regions complain about being put under what they regard as serious economic disabilities. Thus while theoretically it may be true that some rates can be raised by sizeable amounts before they reach their economic ceiling, the level that is politically practical is somewhat lower.

The existence of a 'kinked' demand curve for some railway services could be inferred in the concept of an 'economic ceiling' for certain rates.

<sup>119</sup>Singer, *op. cit.*, p. 261.

<sup>120</sup>For supporting contention see Brennan, *op. cit.*, p. 235.

as "instruments of industrial planning"<sup>121</sup> adds temptation to compulsion.

If nothing else the preceding discussion of the monopolistic-oligopolistic structure of the railway industry and its implications yields equivocal findings. While on many counts this structure can be objectionable - either *per se* or because of certain of its performance ramifications - in many other respects it can be construed to be either inevitable or even desirable. This element of equivocation suggests the need to answer a further series of theoretical questions: to what extent can the alleged defects which inhere in or are logically due to the structure of the industry be remedied; to what extent will the rectification of such defects improve the economic system; and how valid are the standards by which such defects and improvements are defined?

The first question involves both the "structural" and the "performance" (or "abuse") approaches to the railway industry. On the structural side considerable attention has already been given to the concept of natural monopoly and its implications for railway industry structure and firm size. It is accepted that Canada's railways fall into the

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<sup>121</sup>See Galbraith, *op. cit.*, p. 198, to which reference has already been made.

natural monopoly category.<sup>122</sup> That they also possess a "public service characteristic"<sup>123</sup> which in large part helps explain their regulated status may be contributing to public tolerance of their size and the concentration of their industry - two economic attributes which in this context are widely felt to be inevitable if not benign. Although Carr and others are quick to extoll the virtues of "small firm decision-making"<sup>124</sup> increasing size can be attended by more than clumsiness. In an industry characterized by the need to commit large amounts of capital over lengthy spans of time great firm size can be virtually indispensable. It might even be possible to apply to railroads a paraphrase of Galbraith's contention that "the size of General Motors is in service not of monopoly or the economies of scale but of planning."<sup>125</sup> For these reasons changing the number or size of the firms in the railway industry cannot be relied on to have automatic benefits. Theory offers little encouragement to anyone who would advocate a structural panacea.

Casting doubt on the advisability of structural

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<sup>122</sup>This is certainly the inference to be drawn from the following statement by Carr (*op. cit.*, p. 44): ". . . truck transportation is not subject to any marked economies of scale beyond a medium-sized operation and does not fit closely into the traditional pattern of natural monopoly in transportation."

<sup>123</sup>Meyer *et al.*, *op. cit.*, p. 5.

<sup>124</sup>Carr, *op. cit.*, p. 76.

<sup>125</sup>Galbraith, *op. cit.*, p. 87.

revision need not logically vitiate measures taken to influence the behaviour of the components of the existing industrial structure. However, when one accepts the monopolistic or oligopolistic structure of the railway industry and attempts to pursue the social goals one has set for it by taking a "performance approach" to its activities one is faced at least to a certain degree with the problem of determining whether perfectly competitive results - especially the attainment of Paretian welfare optima - can be extracted from a situation in which competition is absent or highly circumscribed. In the area of price and output quantity one might demand the setting<sup>126</sup> of prices in closer conformity with costs and therewith advance the proposition that society's resources will consequently be better allocated;<sup>127</sup> to do so is to succumb to a fallacy, for to approximate standards - in this case Paretian ones - is not to satisfy them. Although the 'reasonableness' of prices or rates is an idea conventionally tied to the concept of competition, Samuelson is quick to point out that

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<sup>126</sup>Whether by the direct method of regulatory intervention or supervision with respect to certain prices or classes of prices or by the indirect method of forbidding certain rate-making practices such as outright collusion.

<sup>127</sup>There is an extraordinary temptation to tinker with railway rates not only because internal cross-subsidization is rampant in the industry, but also because short-run marginal costs are substantially below average costs. Carr (*op. cit.*, p. 52) points out that there is ample scope in Canada for such tinkering.

even strict regulation which forces price to equal average cost will not produce a socially correct allocation of resources unless average cost equals marginal cost *at that point*.<sup>128</sup> Given the almost insuperable difficulties which complexities like joint and common costs cast in the way of determining railway marginal costs Phillips would affirm that "problems of practical rate design do not readily yield to 'scientific' principles of optimum pricing."<sup>129</sup> Some authors would go so far as to codify the observable and conceptual difficulties of instituting marginal cost pricing in some industries into an elaborate theoretical refutation of that sort of performance approach.<sup>130</sup> In any case, while

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<sup>128</sup> Samuelson and Scott, *op. cit.*, p. 532. On their page 536 they further assert that taxing monopoly profit doesn't eliminate the misallocation, but merely changes the recipient of the profit.

<sup>129</sup> Phillips, *op. cit.*, p. 310. On his page 388 Phillips alludes to the existence of two rate regulation standards: one being the "revenue requirement" standard, comprehending total enterprise cost plus a "fair" rate of return and employing internal cross-subsidization; the other being the "consumer rationing" standard which is to be implemented by marginal cost pricing and whose "objective is to obtain a socially efficient allocation of resources. . . the most efficient volume, with the efficiency criterion determined by marginal cost." Of the two, only the "consumer rationing" standard can be presumed to conform with "scientific principles of optimum pricing" and is therefore by Phillips' reasoning the less practicable. It is also by his widely corroborated observation the less prevalent, for on his page 304 he notes that "Differences in the rates of regulated industries are more frequently due to differences in demand."

<sup>130</sup> For instance this is one of the implications of Galbraith's assertion that "there is considerable distress over how little difference nationalization of an industry means" (*op. cit.*, p. 111).

theory can suggest the many benefits to be derived from influencing or controlling the performance of a firm or an industry, it cannot always provide the tools to obtain them.

The two preceding paragraphs have indicated that even from a theoretical point of view structural and behavioural complications stand in the way of obtaining the putative benefits of pure or perfect competition. What economic influence do these complications exert? More specifically, is it desirable to eradicate these complications in one firm or part of the railway industry if similar complications persist in other firms or parts, and would it be desirable to eradicate these complications in the entire railway industry if similar complications or deviations persist in other sectors of the economy? Theoretical answers to these parallel questions are provided by the "Theory of the Second Best."<sup>131</sup> Singer succinctly outlines the substance of this theory in the following manner:

The presence of interdependence among the various equations in the producer sector and the consumer sector has been the basis for an attack on the marginal analysis used to derive the Paretian optimum. Critics of the "classical welfare economics" have contended that if there is introduced into a general equilibrium system a constraint which prevents the attainment of one of the Paretian conditions, the remaining Paretian

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<sup>131</sup>R. Lipsey and K. Lancaster, "The General Theory of Second Best." *Review of Economic Studies* Vol. XXIV (1956-57).

conditions are in general no longer desirable.<sup>132</sup>

The authors of the theory themselves suggest one of the main policy implications of their theory by saying

there is no *a priori* way to judge as between various situations in which some of the Paretian optimum conditions are fulfilled while others are not. . . it is *not* true that a situation in which more, but not all, of the optimum conditions are fulfilled is necessarily, or even likely to be, superior to a situation in which fewer are fulfilled."<sup>133</sup>

Singer translates these suggestions into more practical terms by concluding that:

The second best position can therefore be one in which some firms have marginal revenues greatly in excess of their marginal costs and others have only a slight departure, with the remaining firms having their marginal revenues falling short of their marginal costs."<sup>134</sup>

Briefly speaking, the answer to the parallel questions is thus no. The "second best" assertions require little clarification. They declare that if one accepts pure or perfect competition as a normative standard its functioning can brook no compromise. Whenever aberrations mar its symmetry, its welfare implications suffer and "Resort must be made to value judgements as to the favorability of income

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<sup>132</sup>Singer, *op. cit.*, p. 21.

<sup>133</sup>Lipsey and Lancaster, *op. cit.*, p. 11.

<sup>134</sup>Singer, *op. cit.*, p. 21. This argument could be applied with equal force to the question of multiple rate setting by a single firm.

distribution, individual preferences and social preferences."<sup>135</sup>

One need not, however, accept the theory of the second best to question the value of trying to create a competitive structure in or trying to draw competitive performance from the railway industry. As a normative standard competition is defective.<sup>136</sup> At its best pure competition provides a basis for measuring static efficiency. Even in this limited role it may be deficient in some respects, such as the provision of collective goods. But static efficiency is only one of several important and potentially conflicting success criteria for an economic system. Others cited by Balassa include dynamic efficiency, growth rate, consumer satisfaction, and income distribution. The deficiencies of competition in satisfying the dynamic efficiency criterion lie in the areas of technological progress (which may be slower, less smooth, and of lower quality than under other economic regimes), recognizing external economies, and susceptibility to severe economic fluctuations. The deficiency vis à vis growth rate involves the question of the savings ratio (which may not be as high under a competitive regime as under others). Deficiencies

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<sup>135</sup> *Ibid.*, p. 24.

<sup>136</sup> A useful summary of some of its detractions may be found in B. Balassa, "Success Criteria for Economic Systems" in Bornstein (ed.), *Comparative Economic Systems* (Homewood: Irwin, 1965), pp. 2-18.

respecting consumer satisfaction are harder to find (and more subjective in definition) because consumer sovereignty is a prominent characteristic of pure competition. But deficiencies in satisfying the income distribution criterion can be discerned in the areas of dynamic efficiency (with which it interacts) and social equity (a value judgement). Awareness of this range of deficiencies has prompted Singer to say, "The pure competition model is neither a description of reality nor a normative standard toward which . . . policy should strive."<sup>137</sup>

The most significant conclusion obtainable from the preceding discussion is that economic theory provides no firm automatic grounds for condemning the present oligopolistic structure or performance of the Canadian railway industry. Reference need only be made to three previous questions to confirm this observation. In the first place many of the alleged<sup>138</sup> defects which inhere in or are logically due to the structure of the industry can be corrected only with difficulty and at considerable social

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<sup>137</sup> Singer, *op. cit.*, p. 22. His specific reference is to anti-trust policy but I believe his remarks to have more general applicability. His assertion about the necessity of resorting to value judgements has already been noted.

<sup>138</sup> Singer, *op. cit.*, p. 23) emphasizes the subjective element in these allegations when he points out that while it is conventional to argue that a monopolistic industry structure underproduces in comparison to a competitive structure, the plausible counter-argument can be advanced that the competitive structure overproduces in comparison to the monopolistic.

cost. Second, the "rectification" of such alleged defects need confer no social benefits.<sup>139</sup> And third, the normative standard (or model) by which such defects are alleged and rectifications defined is of questionable validity.

Although examination of the relevant theory does dispel some of the myths about railroads (e.g. the convention that a railroad is an artificial and intrinsically evil monopoly) it fails to provide an unambiguous picture of what the railway industry should be structurally and how it should perform. Beyond this, the examination forcefully implies that these complex, interrelated problems cannot be solved simply by tying rail rates to costs, and that the attempt to do so could do as much harm as good.

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<sup>139</sup> In fact Singer (*op. cit.*, p. 17) suggests that the reversion of an industry to a more competitive structure could be socially undesirable.

PART II

## CHAPTER IX

### INTRODUCTION

The first Part of this thesis served to explore the first half of the dual hypothesis. The proposition tested was that economic theory cannot be said to justify a scheme of railway regulation whose primary aim is to create or perpetuate a system of rates based on cost. Successive chapters discussed the organization and output of the transportation system, location theory, and the relationship between transportation and certain other forms and aspects of economic activity. The reader is referred to these chapters for their details and conclusions. Meanwhile attention will be transferred to the second part of the hypothesis, which asserts that the evidence provided by Canadian regulatory experience cannot be said to justify a scheme of railway regulation whose primary aim is to create or perpetuate a system of rates based on cost.

While the preceding Part dealt with certain aspects of economic theory closely related to transportation regulation, this Part will be concerned more with the specific historical and statutory context of railway regulation in Canada. Its approach is therefore more

inductive and empirical than that of its predecessor and it will focus on the evolution of railway regulation and policy in this country, taking note of actual situations and events, and of their ostensible causes and effects.

For two reasons no comprehensive attempt will be made to provide theoretical interpretations of all the events to be related in this chapter. The first reason is that in many instances the relevant theory had not yet been formulated or was not known or understood by the persons involved. In those cases in which the consciousness of theory did not play a prominent role in decision-making, theory cannot form a major part of their historical exposition. The second reason is derived from the numerous equivocal aspects of theory cited in the first part. To the extent that economic theory provides weak or ambiguous standards by which to understand or judge events and policies its right to inclusion in a historical analysis is diminished. In the historical context theory has been a frequently neglected and imperfect tool.

How are the purposes of railway regulation in Canada to be discerned? It is a fundamental premise of this part that the key to understanding is to be found in the historical forces which contributed to the origin and development of regulation and regulatory policy. Having identified regulatory purposes one is better equipped to analyse particular regulatory policies, which can bear the

same conceptual relationship to purpose that tactics bear to strategy. Exploration of the history of regulatory purposes in Canada therefore is doubly significant: it is intrinsically interesting and it helps to illuminate specific regulatory policies and their immediate objectives.

Important questions of definition attend the problem of isolating the handful of fundamental regulatory purposes from the rest of the complex history of regulation. How fundamental is fundamental? The answer tends to vary with the level of analysis used to distinguish the irrelevant or the peripheral from the germane and the basic.

Economic theory can provide the criteria used in the process of scouting and defining the fundamental purposes of regulation. But the intrusion of theory can tend to obscure and oversimplify important historical factors. As an example of this tendency one can cite the assertion by Meyer *et al.* that "regulation is essentially a substitute for competition in the protection of the public interest."<sup>140</sup> As a summary of the purpose of regulation this statement cannot, despite its large element of truth, accurately be applied to Canadian transportation history, not only because it is too general, but also because it neglects several major historical influences.<sup>141</sup>

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<sup>140</sup> Meyer, Peck, Stenason and Zwick, *op. cit.*, p. 1.

<sup>141</sup> In fact the quoted abstraction suffers from two analytical defects. First, it implies that the lessons of

Although it is possible to err in the direction of simplicity, it is also possible to err in the direction of complexity in defining purpose. An example of the latter class of error would be to assign unique and primary significance to every regulatory policy and decision in spite of the fact that so many such decisions and policies are no more than tactical derivatives of more basic and durable purposes.

Theory can simplify and fact can amplify. Finding the middle ground between the overly general and the excessively specific is thus the definitional problem facing anyone who would seek the fundamental purposes of railway regulation in Canada. The solution to the problem is necessarily arbitrary. The writing of this part has required such a solution and it has been to select the framework provided by C. F. Phillips.

A useful concept of regulatory purpose is contained in Phillips' summary account of the functions of U.S. regulatory commissions:

1. Commissions have sought to prevent excessive (monopoly) profits and unreasonable (inequitable)

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the static competitive model apply in an unqualified manner to the confused dynamics of a developing economy. Second, it implies that intelligent awareness of the theoretical benefits of competition or the recognition of the consequences of its absence obtained within the ranks of policy-makers in Canada's early years. Both these defects prevent it from being compatible with the facts of Canadian experience.

price discrimination among customers, commodities, and places. 2. Commissions have tried to assure adequate earnings so that the regulated industries would continue to develop and expand in accordance with consumer demand. Profits, however, have not been guaranteed. 3. Commissions have sought to provide service to the maximum number of consumers. In some instances, competition has been limited to permit internal subsidy (low-density routes may be subsidized by earnings on high density routes). In other cases, the government has given direct (cash) or indirect (facilities) subsidies. 4. Commissions have often promoted the development of an industry or a region. Again, subsidies have been given to achieve this objective, as in the case of local service airlines, and water carriers or an industry's rate structure designed to promote the industrial development of a region as in the case of some differential rates in the transportation industry. 5. Commissions, in some instances, have been concerned with ensuring maximum public safety. This has been an important objective in the provision of transport services, particularly in the air and motor carrier industries.<sup>142</sup>

With some re-ordering and a few modifications this balanced approach is suitably expressive of Canadian historical circumstance.

Bearing Phillips' guidance in mind the format of the ensuing discussion of purpose will comprise five categories. The first will deal with the political, social, and military considerations which contributed to the development of railroad regulation in Canada; it has no exact counterpart in Phillips' scheme. The second category will treat the complex of issues associated with monopoly; it corresponds to Phillips' first category. The third will consider the problems involved with maintaining the financial health of

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<sup>142</sup>Phillips, *op. cit.*, p. 124.

carrier enterprises; it is the equivalent of Phillips' second category. The fourth category will involve questions of service maintenance; it corresponds to Phillips' third category. The fifth category deals with matters of regional development; it is equivalent to Phillips' fourth category. Finally it bears mention that this part will not emulate Phillips in according separate and equal treatment to questions of public safety but, while in no way underestimating their enduring importance, will subsume them into other parts.

Before category by category treatment can proceed, two qualifying comments are required. The first is that major incidents, policies or other regulatory milestones will be described in greatest detail and analysed most thoroughly in the category to which they are judged most pertinent, although their mention may recur elsewhere. Second, because of editorial choices of emphasis, the several parts will vary in weight. For example, since the matter of service maintenance is allied to the questions of monopoly and carrier enterprise financial health, it is possible to view that particular matter as being in many respects the derivative of those questions and therefore to lighten its treatment accordingly. With these cautionary notes delivered the second Part can proceed.

This Part will be divided into five chapters, one corresponding to each of the categories of regulatory

purpose although not in the order discussed above. Every one of these chapters will provide a selective treatment of the significant historical circumstances associated with the particular purpose being discussed, as well as comparative reference to certain pertinent statutory authority. This legislative material will form the concluding portion of each chapter, and will be kept together to facilitate reference. The four major Canadian railway regulating statutes to which reference will be made are the Railway Act of 1868, (Chapter LXVIII, Statutes of Canada, First Session of the First Parliament of Canada), the Railway Act of 1903 (Chapter 58, Statutes of Canada, Third Session of the Ninth Parliament of Canada), the Railway Act as it existed after World War II (Chapter 234 of the Revised Statutes of Canada 1952) and the Railway Act as amended by the National Transportation Act of 1966-67 (Bill C-231 as passed by the House of Commons on January 27, 1967, during the First Session of the Twenty-Seventh Parliament of Canada). To avoid excessive footnoting the manner of identification will be to cite the section number and year: e.g. (Section 12, 1966-67). Obviously, many other (e.g. other Railway Acts, Railway Charters, subsidy Acts) legislative references could be offered, but attention to these four landmark Railway Acts is more than sufficient to demonstrate the statutory embodiment of the various regulatory purposes.

The justifiable conviction underlying the many historical perspectives provided in this part is that Canadian railway regulation arose and developed in response to several pressures and in order to pursue several objectives. The exploration of this complex historical context is based on the preliminary finding (or tentative assumption, if you will) that the implementation of cost-based rate regulation was not among the primary objectives of Canadian railway regulation. An attempt will therefore be made to determine whether the identifiable primary objectives *as well as* their related regulatory context are compatible with or indifferent or inimical to rate regulation based on cost. If the third possibility proves to be the case with respect to at least one of the identifiable primary objectives, the preliminary finding will tend to be confirmed.

## CHAPTER X

### MILITARY, SOCIAL AND POLITICAL ASPECTS

It is customary in some circles to view railway regulation as an exclusively economic phenomenon. This attitude, as articulated by Meyer *et al.*, has already been glimpsed. In modified form it is also evident in the following remark by B. W. Lewis contending that the purpose of a regulated industry is "to provide the public with as much and as good service as the public wants and is willing to pay for."<sup>143</sup> Lewis' contention is, nevertheless subject to interpretation. On the surface its use of the words "wants" and "willing" could suggest that regulation should be no more than a market substitute. Yet this implication is not necessarily the only one to be drawn. The three variables in the statement are quality, quantity, and price of output, and the method by which they are to be reconciled is not stipulated. Therefore, the possibility of reconciliation by the political (or other economically "arbitrary") process remains open. And, as long as this

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<sup>143</sup>B. W. Lewis, "Emphasis and Misemphasis in Regulatory Policy" in W. G. Shepherd and F. G. Geis (eds.), *Utility Regulation: New Directions in Theory and Policy* (New York: Random House, 1966), p. 219.

possibility exists it is conceivable that goals beyond the comprehension of a conventional market system could be pursued. In other words, railway regulation, because it can accommodate the pursuit of other than economic goals, is at least potentially more than an economic phenomenon.

In Canada this potential has been realized to a very considerable extent. Military, social and political conditions have found expression as explicit purposes of government railway policy and have thereby contributed to the existence and evolution of transportation regulation in this country. While it is always possible to detect the omnipotent influence of economic factors behind military, social and political situations, the three latter are sufficiently distinct to merit individual treatment.

Military necessity has played a persuasive role in forming Canadian governments' attitudes to railway transportation and military precaution has thereby emerged as a purpose - albeit a subsidiary one - of its regulation. In the Confederation era the military situation in this country comprised five basic elements: a vast territory; a small, unevenly distributed population; a lengthy frontier, much of it landlocked on a perpetual or seasonal basis; a remote colonial defender; and a burgeoning, tempestuous neighbour. The combination of the first two elements (territory and population) made it impractical to rely on local militia levies to provide numerically adequate local

defensive concentrations. The third element (frontiers) aggravated the problem by vastly enlarging the areas in which such concentrations might be required. That this difficulty of concentration was not remediable by the application of sea power was due in part to geography and in part to British policy which for the seven decades following Waterloo was inhospitable to defence expenditure requests. This financial stringency was particularly acute during the ministries of Gladstone and Disraeli, and did not really begin to relent until the Naval Defense Act of 1889.<sup>144</sup> These military factors commended a rapid and dependable system of overland transportation - only the railroad qualified. And the fifth element (the United States) added a note of urgency to the need.

In the latter half of the nineteenth century railways had demonstrated their technical superiority over other available transportation methods in meeting a variety of military needs - in simplest terms; cargo capacity, speed and dependability - including those existing in this country. Both the U.S. Civil War and the Franco-Prussian War provided vivid demonstrations of the military value of railways. The appraisal of the railroad's warrior virtues by the noted

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<sup>144</sup>Valuable comments on contemporary British naval policy may be found in O. Parkes, *British Battleships* (London: Seely Service, 1956), Chapters 36 and 58.

military historian, J. F. C. Fuller, is most emphatic: "the genius of George Stephenson gave life to the Clausewitzian theory of the nation in arms, for without the railway the mass-armies of the second half of the nineteenth century could not have been supplied".<sup>145</sup>

The lessons of foreign wars were not lost on British North American authorities. There had been a military aspect to the programme of canal construction which preceded the railway era. This awareness of military imperatives was carried forward and exerted a comparable influence on railway policy. Morton depicts the situation by telling us that "government, which in British America, had from the first provided or helped to provide canals and locks, for commercial as well as military reasons, must assist also in the construction of railways."<sup>146</sup> This view is shared by Currie who ranks "defence" among the main reasons for governmental provision and regulation of transportation systems.<sup>147</sup> It helped generate a series of appropriate policies beginning with the Guarantee Act of 1849, an important step in the direction of supporting

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<sup>145</sup>J. F. C. Fuller, *The Decisive Battles of the Western World*. (London: Granada Publishing, 1972), p. 219.

<sup>146</sup>W. L. Morton, *The Kingdom of Canada* (Toronto: McClelland and Stewart, 1963), p. 289.

<sup>147</sup>Currie, *op. cit.*, pp. 3-5.

private construction efforts.<sup>148</sup>

Nor did military imperatives diminish as Canada grew. As the nation extended itself westward it exposed a lengthy and palpably vulnerable western boundary to its aggressively expansionist American neighbour.<sup>149</sup> Only a railway could provide an adequate military shield against U.S. intrusions into the vast empty spaces of the Prairies and beyond - and such intrusion was a persistent threat in the years following the American Civil War.<sup>150</sup> This potential military threat was aggravated by U.S. railway building which enhanced the mobility of that country's armies. Yet the only tangible military use to which the CPR was put in its early years was the suppression of domestic rebellion - the sad Batoche affair of 1885.<sup>151</sup>

Canada's railway system also provided logistical support to the national effort in both World Wars. It did not emerge unscathed. The pressure exerted on the precarious finances of certain Canadian railway companies by First World War conditions (prominent among them being inflation) spurred the wave of public acquisitions which

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<sup>148</sup> Morton, *op. cit.*, p. 287.

<sup>149</sup> Morton, *op. cit.*, p. 299.

<sup>150</sup> *Ibid.*, p. 313.

<sup>151</sup> *Ibid.*, p. 370.

eventually produced the CNR,<sup>152</sup> and emphasized the indispensable nature of railways in times of military crisis. In the latter connection Morton says of the Union Government of 1916 that "It was designed by its creators. . .to be a new government; a government of national concentration with a special commission to fight the war (and) to deal with the reorganization of the country's railways. . ." <sup>153</sup> A somewhat similar but more prolonged and subdued railroad upheaval attended the Second World War. To the extent that that conflict contributed to inflationary pressure and accelerated equipment attrition it sparked the sequence of events which culminated in the 1967 National Transportation Act. Our railways have thus been both the weapons and the victims of war.

There is certainly enough historical evidence indicating that military considerations persuaded colonial and national governments to intervene in railway matters to a much greater extent than they otherwise might have. The weight of this evidence suggests that defence-associated motives should form part of one important category of reasons for the regulation of Canada's railways. Although Canadian transportation legislation contains limited reference to military factors there can be no doubt that

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<sup>152</sup> *Ibid.*, p. 423.

<sup>153</sup> *Ibid.*, p. 427.

military necessity and precaution belong on the list of regulatory purposes. This specific purpose is ultimately reflected not only in the geographic and financial characteristics of the railway system but also in the scope of regulatory authority. The statutory material contained in this chapter demonstrates this point. Also, it must not be forgotten that the powers to deal with emergencies and apprehended emergencies and to legislate for the general good of Canada conferred on the national government by other statutes loom in the immediate background to reinforce any restricted regulatory powers. Adjustments to further strengthen transportation regulation and policy to accommodate military goals are always possible.

In the sense that statutory evidence is somewhat scanty, the social reasons for (and by extension, the social purposes of) railway regulation in Canada are almost as difficult to glimpse as the military. These social reasons are nevertheless of considerable significance. A railroad system came to bind the colonial settlements which eventually formed Canada together in a fashion which had more than economic implications. The communications advances accompanying the advent of the railway created a revolutionary social bond between people and communities. So dramatically did railway transportation enhance the mobility of people as well as goods that it drew a degree

of public attention transcending even its great economic importance.<sup>154</sup>

Railway magic was abroad in the land. Most of North America was influenced by it. Matthew Josephson describes hysterical celebrations attending the completion of many American railways - even those built at exorbitant cost with the connivance of the brazenly corrupt.<sup>155</sup> Similarly Phillips characterizes the pre-1870 American outlook by saying that "people generally looked on the railroad as a great benefactor."<sup>156</sup> From his Canadian viewpoint Morton refers to "the great movement of the century-unification by commerce, railways, and the spirit of nationality."<sup>157</sup> Glazebrook also mentions this optimistic ethos which in the imagination of the ardent conjured up visions of "Canada's century."<sup>158</sup>

That the railroad contributed materially to changed social circumstances in Canada and to the new attitudes

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<sup>154</sup> Its effect was most pronounced in Western Canada. Glazebrook indicates that "the building of railways from Lake Superior to the Pacific Coast revolutionized conditions in that area. . ." G. P. Glazebrook, *History of Transportation in Canada*, Volume II (Toronto: McClelland and Stewart, 1964), p. 26.

<sup>155</sup> See, for example, M. Josephson, *The Robber Barons* (New York: Harcourt, Brace and World, 1934), p. 91.

<sup>156</sup> Phillips, *op. cit.*, p. 443.

<sup>157</sup> Morton, *op. cit.*, p. 308.

<sup>158</sup> Glazebrook, *op. cit.*, pp. 119-120.

which these changes engendered is amply demonstrated by the following passage:

In the continental provinces of Ontario, Quebec, and New Brunswick, the provincialism of British North America had been overcome largely by the magic of the new means of transport, the railway, which meant so much to the mainlanders. . . But in peninsular Nova Scotia, where there was no railway magic at work. . . opposition to Confederation was open, organised, and in control of the province.<sup>159</sup>

Innis offers a somewhat more analytical interpretation of the social and economic impact of railways:

The history of the Canadian Pacific Railroad is primarily the history of the spread of western civilization over the northern half of the North American continent. The addition of technical equipment described as physical property of the Canadian Pacific Railway Company was a cause and an effect of the strength and character of that civilization. The construction of the road was the result of the direction of energy to the conquest of geographic barriers. The effects of the road were measured to some extent by the changes in the strength and character of that civilization in the period following its construction.<sup>160</sup>

In fact the frequently outrageous railway frenzy which gripped so much of the population had a solid basis in accomplishment. Analysing the comparable American situation Mumford assigns to the railway system much of the responsibility for the urbanization of the United States. Witness the following comment: "Between 1920 and 1940 the

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<sup>159</sup> Morton, *op. cit.*, p. 328.

<sup>160</sup> H. A. Innis, *A History of the Canadian Pacific Railway* (Toronto: University of Toronto Press, 1971), p. 287.

United States still had one of the best (rail) passenger services both regional and national, on the planet. . . (which) because of the urban concentrations they made possible, were the essential underpinnings of profitable freight and express operations."<sup>161</sup> Urbanization has been one of the most prominent social trends operating in Canada and the United States in the last hundred years, and railroads have contributed mightily to it. Widespread popular railway enthusiasm was symptomatic of - among other things - the railroad system's ability to promote social integration on an unprecedented scale.<sup>162</sup> The harnessing of this ability was one of the foundations as well as one of the promises of Confederation. It constitutes yet another persuasive source of government concern for the destiny of Canada's railways.

The political reasons for (and hence, to a great extent, the purposes of) railway regulation in Canada are

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<sup>161</sup>L. Mumford, "In Praise of Trains," in *Harpers*, Vol. 245, August, 1972, pp. 22-26.

<sup>162</sup>The fact that railway economics abetted the concentration of locational advantage and promoted urban agglomeration was not universally beneficent in Canada. Eventually, it came to be realized that social integration based on increasing urbanization had adverse consequences for some regions. By contributing to the growth of a new urban society the railroad system helped create social and cultural distinctions which accompanied and in some cases aggravated those regional economic grievances which sound a recurrent theme in Canadian railway history. Even when dimly perceived this social consequence of railways undoubtedly influenced the atmosphere in which regulation evolved and helped bolster the national impulse to regulate.

numerous and significant. While almost every type of pressure on public policy is channelled through the political process, there are nevertheless three categories of reasons whose content is primarily political. The first category involves the role of transportation regulation in interprovincial political relations. The second category deals in parallel fashion with international relations. And political attitudes, and circumstances influencing the relationship between government and enterprise comprise the third category.

Confederation was a series of political bargains between the consenting British North American colonies. Railways were a crucial element in these bargains. Among the important negotiated terms of Canadian union were those providing for the construction of interprovincial railway lines. Although the initial provision of railroad facilities is not *per se* a regulatory matter, the government regulation of the subsequent operation of railroads built pursuant to political agreements is necessarily conditioned by the political circumstances of their construction. For that reason the political purposes of Canadian railway construction inform the political context of regulation.

When one acknowledges the intimate association between the politics of railway construction and the politics of railway regulation, one can trace the roots of

the latter to the years preceding Confederation. Currie mentions our tradition of governmental provision and regulation of transportation which, he says, dates from "the earliest days of settlement."<sup>163</sup> Whereas in earlier times the colonial power had taken much of the initiative and borne much of the expense (especially where military considerations were prominent) the responsibility began to devolve increasingly on resident governments. It was energetically taken up by the Canadas (Ontario and Quebec) in their effort to surmount the difficulties created by the United Kingdom's abolition of the Corn Laws in 1846. Morton depicts the process in the following manner:

Cast out from the Eden of the protected British market into the depression of 1847, the colonies groped their way past the lines of annexation to a pattern of colonial protection, railway construction and reciprocal trade with the United States. As the imperial ties slackened the continental ones tightened. The full pattern appeared in the Grand Trunk Railway begun in 1853, and the Reciprocity Treaty of 1854.<sup>164</sup>

This "pattern" of weaving transportation policy into the fabric of economic and political policy proved so rewarding this first time that it became a precedent to be followed throughout Canadian history. To the magic of railroads was attributed much of the success of the whole policy combination. Advocacy of railway construction became

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<sup>163</sup>Currie, *op. cit.*, p. 3.

<sup>164</sup>Morton, *op. cit.*, p. 162.

fashionable to the point of transcending party lines. In his description of politics in the colonial Canada, Morton notes

the great railway boom in which Tories like Sir Allan McNab combined with Reformers like William Hamilton Merritt, the inspirer of the first Welland Canal, under the slogan attributed to Sir H. Allan: "Railways are my politics".<sup>165</sup>

The political prominence and promise of the railways had effects both inside and outside the Canadas. Within, the influence of railways became entwined with pressures which did not recognize the boundaries of Upper and Lower Canada. In this connection, mention can be made of the "Canada First" sentiment, with its yearning for a Canadian north-west,<sup>166</sup> Galt's campaign for "federation" among Britain's colonies,<sup>167</sup> and the Watkin recommendation - of fundamental significance because it implied a major shifting of trade routes and commercial focus to an inter-colonial basis.<sup>168</sup> Many of these pressures became more intense and more overtly political with the lapse of Reciprocity. Referring to the situation in Upper and Lower Canada at that time Morton contends that

colonial democracy by ensuring the survival of the French Canadian nationality, made it necessary to create the institutions of a plural or bi-national, society. . . This necessity was reinforced after 1857 by the need to form some pattern of economic

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<sup>165</sup> *Ibid.*, p. 293.

<sup>166</sup> *Ibid.*, p. 307.

<sup>167</sup> *Ibid.*, p. 309.

<sup>168</sup> *Ibid.*, p. 312.

expansion more profitable than that of the Grand Trunk Railway and the Reciprocity Treaty had proved to be. The new formula was an Intercolonial and a Pacific Railway, and the development of British American trade in the northern half of the continent.<sup>169</sup>

This passage offers convincing evidence of the influence which the prospects of directed railway transportation had on the political choices which shaped the destiny of what were later to become the central provinces of Canada.

Outside Upper and Lower Canada (and with the obvious exception of Newfoundland and the previously noted obstinacy of Nova Scotia) the call for railway construction also became a reliable political device. Most of the other British American colonies were affected by pressures associated with railway magic, pressures to which they were all eventually to succumb.<sup>170</sup> To the extent that it came to be believed that a railroad system could confer benefits in the areas of dependability, prosperity, defence and social cohesion these pressures became more politically influential.<sup>171</sup>

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<sup>169</sup> *Ibid.*, p. 272.

<sup>170</sup> The fact that railway-oriented pressure for colonial union triumphed over vigorous political counter-attacks in some quarters from U.S. rail interests testified to its popular strength. On his pages 322 and 323 (*op. cit.*) Morton relates that while the American railway money had helped finance the victorious 1864-65 campaign of the anti-Confederationists in New Brunswick, Canadian funds helped return the pro-Confederation Tilly regime in 1866.

<sup>171</sup> Parallel references to this phenomenon can be found in preceding paragraphs dealing with social factors.

During and after the U.S. civil war political forces (many of which were influenced by or connected with railways) within the various colonies converged to produce the sequence of negotiations which culminated in Confederation. Among other jointly acceptable proposals were those involving trade and railway links, whose acceptance now extended beyond the Canadas. In fact, Glazebrook offers the following interpretation of the pre-Confederation concensus: "The political necessity of the railway was acceptable, whatever might be its intrinsic merits."<sup>172</sup> As a consequence, the Quebec Conference passed resolutions calling for an Intercolonial railway and improved communications to the north-west,<sup>173</sup> and at the London Conference the Intercolonial was made a *sine qua non* of union.<sup>174</sup>

Morton reduces Confederation to its strategic essentials by analysing it as a political exchange in which the other participants traded on Upper Canada's desire for a Pacific Railway to secure an Intercolonial Railway and constitutional guarantees for the French in Lower

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<sup>172</sup>Glazebrook, *op. cit.*, p. 9.

<sup>173</sup>*Ibid.*, p. 8.

<sup>174</sup>Morton, *op. cit.*, p. 323. On his page 314 Morton mentions the earlier (1862) Intercolonial Railway negotiations which centered on questions of costs and Imperial guarantees.

Canada.<sup>175</sup> Oversimplified as this view may be it nevertheless focusses attention on the political impact of railways, whose mark is enshrined in the B.N.A. Act.

Interprovincial bargains involving railways were not fulfilled simply by the provision of physical facilities. Therefore, the consideration of the domestic political reasons for Canadian railway regulation cannot be limited to discussion of B.N.A. Act provisions. This assertion can be supported by reference to post Confederation railway affairs. The histories of Canada's major railways are illustrative of some of the regulatory consequences of the political terms of union.

As mentioned earlier<sup>176</sup> inconclusive negotiations directed to creating an Intercolonial Railway linking the Canadas with the Maritimes were conducted five years before Confederation. So crucial was it to the political union of New Brunswick and Nova Scotia with Ontario and Quebec, "The Intercolonial. . . was a public work, built and operated by government."<sup>177</sup> The federal politicians of the day were under no delusions that the line could operate without subsidies. Glazebrook points out that in fact the

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<sup>175</sup> *Ibid.*, p. 302. Those in Canada opposed to the Confederation proposals saw them as machinations of the Grand Trunk Railway, which at one time entertained trans-continental aspirations (*ibid.*, p. 321).

<sup>176</sup> On information provided in Morton, *op. cit.*, p. 314.

<sup>177</sup> *Ibid.*, p. 331.

legislature was fully warned that either the Inter-colonial would have to be subsidized to allow artificially low rates or else it would not be used sufficiently to make it pay."<sup>178</sup> Elsewhere he identifies the three factors responsible for the decision in favour of low rates, namely: first, the need to observe the spirit of Confederation agreements (i.e. the railroad could not, for political reasons, be allowed to languish); second, the need to meet water transport competition at many points (a proposition which serves to confirm the high political - as opposed to economic - content of the initial decision to build the line); and third, the eventual need to meet the competition of the shorter Canadian Pacific route through Maine.<sup>179</sup> Not surprisingly, therefore, Morton observes that the Inter-colonial never made a profit.<sup>180</sup> Yet bearing in mind its political origins one cannot in fairness hold profitability to be the prime criterion of its success or failure, "if the road must be regarded as an essential part of Confederation, its success is measured in terms of the value of Confederation."<sup>181</sup>

Once established the precedent of politically

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<sup>178</sup> Glazebrook, *op. cit.*, p. 10.

<sup>179</sup> *Ibid.*, p. 24.

<sup>180</sup> Morton, *op. cit.*, p. 357.

<sup>181</sup> Glazebrook, *op. cit.*, p. 24.

sanctioned and subsidized low rates in the Maritimes endured. For example, the 1926 Duncan Royal Commission was to recommend a 20% rate reduction in the region<sup>182</sup> and consequent legislative provisions were to remain on the statute books for decades.<sup>183</sup> Yet, for the Maritimes, the railways never lived up to the expectations which had prompted so much political effort.<sup>184</sup>

The political history of the transcontinental railroad to the Pacific had its statutory origins in the British North America Act.<sup>185</sup> Although it was eventually to prosper in the form of the CPR, the Pacific Railroad had as one of its primary initial purposes the forging of a tangible bond linking what was to become Western Canada to the confederated East.<sup>186</sup>

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<sup>182</sup>Morton, *op. cit.*, p. 445.

<sup>183</sup>For example, see the statutory material contained in Chapter 2.5.

<sup>184</sup>This disappointment was due in part to the railway abetted development of Montreal, Vancouver and Churchill: Glazebrook, *op. cit.*, p. 197.

<sup>185</sup>See the statutory references at the end of this chapter.

<sup>186</sup>Glazebrook (*op. cit.*) offers several observations which suggest the surpassing importance of this political motive. On his page 45 he comments on the abundance of outlandish schemes proposed to provide a Pacific railway. And on his pages 47 and 48 he implies that, in view of the small population west of Lake Superior circa 1870, the vast expenditures on the Pacific Railway represent over-bidding for the allegiance of British Columbia.

Despite all its political significance the CPR was not considered an unmixed blessing in the areas which it traversed. Even before its completion discontent about the CPR began to create political friction between the federal government on the one hand, and the provincial government of Manitoba and organised agriculture on the other. More detailed information about the sources of this discontent will follow, but the mere facts that Manitoba chose deliberately (and successfully) to defy Ottawa's railway policy,<sup>187</sup> and that the Farmer's Union levelled frequent protests against that same policy<sup>188</sup> confirm the highly political status of Canada's railroads.

The national political group which most conspicuously incorporated railway development into its public platform was the Conservative Party.<sup>189</sup> The Conservatives' partisan success in espousing in repeated elections that combination of railway and other policies known collectively as the National Policy was emulated after 1896 by the rival Liberal Party.<sup>190</sup> This Liberal adoption of the

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<sup>187</sup> See, for instance, Morton, *op. cit.*, pp. 373-378.

<sup>188</sup> *Ibid.*, pp. 366 and 373.

<sup>189</sup> Discussing the implications of the Pacific railway for John A. Macdonald's Conservative regime, Morton (*op. cit.*, p. 344) says, "The railway itself, as a national undertaking and an economic enterprise, would win the government powerful moral and political support."

<sup>190</sup> *Ibid.*, p. 346.

National Policy recorded the political concensus<sup>191</sup> on the national value of railways and testifies to the political significance of railways almost thirty years after Confederation.

In fact, interprovincial political relationships (in the guise of federal-provincial relations) exerted an enduring influence - one with regulatory implications - on railway transportation. In this respect it must be remembered that political considerations bore substantial weight in shaping sensitive railway location decisions which affected the relative commercial prospects of Toronto and Montreal,<sup>192</sup> and in determining the terms of the Crowsnest Pass Agreement (which affected rates). Of the latter's impact on Canadian railway regulation Morton says, "Railway regulation. . .was thus maintained by sectional political pressures as a complex of sectional compromises."<sup>193</sup>

Other similar situations are also worth noting. The years preceding World War I witnessed efforts to complete further transcontinental railway systems. The involvement of the federal government in these efforts - which

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<sup>191</sup>A notorious exception to this concensus were Western Farmers. Morton (*op. cit.*, p. 435) indicates that their struggle against it did not culminate until 1921.

<sup>192</sup>See, for example, Morton, *op. cit.*, p. 304.

<sup>193</sup>*Ibid.*, p. 443. More will be said later about the Crowsnest Agreement.

eventually were to produce much of what is now the CNR - was complex and in some ways bizarre. Political considerations were apparently prominent in prompting the Liberal government of the day to permit, encourage and assist these ambitious railway development proposals. Glazebrook suggests that one of the Laurier regime's motives for approving and promoting the two additional systems (the Canadian Northern and the Grand Trunk Pacific in conjunction with the National Transcontinental) was to redeem the Liberal Party's image of having opposed the Canadian Pacific Railway and thereby the welfare of Western Canada.<sup>194</sup> Later still the construction during the inter-war years of the Hudson Bay Railway has been credited to political pressure.<sup>195</sup> Even contemporary opinion recognised this influence, which recognition is expressed by Glazebrook as follows: "Whether it (the railway) was a triumph for economic principles of transportation remained to be proved."<sup>196</sup>

As Canada grew and changed, so did the political context in which railway policy existed. Roughly the first fifty years could be characterized by what Morton calls "the

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<sup>194</sup> Glazebrook, *op. cit.*, p. 125.

<sup>195</sup> Morton, *op. cit.*, p. 447.

<sup>196</sup> Glazebrook, *op. cit.*, p. 191.

work of adding railway communication to political union."<sup>197</sup>

After the First World War, a drastic change of focus occurred. In Morton's words:

The work of nation-building for which the national authority had been made so strong was in fact completed. There was no such need for railways as the pre-war years had seen. The development of the northern frontier was a task for the provinces. The new urban and industrial society, the new motor traffic with all its demands, strengthened provincial rather than national powers and revenues.<sup>198</sup>

But this change, however profound, must not be construed to mean that the railways had lost their political significance. Reference need only be made to the Rowell-Sirois Commission Report<sup>199</sup> to indicate the continuing interest of the federal government in using national institutions for national purposes. This interest can be presumed to exist today and to justify the maintenance, if not the use, of substantial regulatory power over Canadian railways.

International political considerations also played a role in shaping Canadian railway policy and its regulatory component. Even before Confederation the eclipse of

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<sup>197</sup> Morton, *op. cit.*, p. 354.

<sup>198</sup> *Ibid.*, p. 437.

<sup>199</sup> Of which Morton (*op. cit.*, p. 479) says, "The Report, in brief recommended that the wealth produced nationally should be taxed nationally and redistributed on a national basis. . . ."

recently completed Canadian canals (circa 1850) due to competition from the Erie Canal and American railways gave political impetus to demands for a vigorous railway construction programme. In addition to providing for the Canadian carriage of Canadian cargo, railway construction occurred with the hope of providing transfer service to U.S. shippers. As Morton puts it, "Canada clearly had to add railways to its canals, if it was to continue to compete for the carrying trade of the American West."<sup>200</sup> One of the results of these pressures and aspirations was the Grand Trunk, the largest rail system in pre-1867 British North America. The difficulties experienced by the Grand Trunk reveal some of the political implications and consequences of this country's early railway history.

The emergence and spread of railways in the Canadas created a serious political problem with international overtones. In the first place the officially sanctioned American ambitions of the early colonial lines were not fulfilled.<sup>201</sup> Glazebrook mentions "the evident failure of the Canadian trunk lines to secure such a portion of American business as would repay their generous expenditure. . ."<sup>202</sup> The phenomenon of economies of scale,

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<sup>200</sup>Morton, *op. cit.*, p. 289.

<sup>201</sup>Josephson (*op. cit.*, p. 51) mentions the U.S. protective tariffs of 1862 and 1864 which were instrumental in this failure.

<sup>202</sup>Glazebrook, *op. cit.*, p. 1.

which applied even to the relatively primitive railways of the mid-nineteenth century, meant that this "failure" resulted in significantly higher average costs for lines deprived of anticipated U.S. traffic. The relatively large Grand Trunk system was particularly hard hit by the dearth of American custom. Its reaction was to escape high average costs by seeking opportunities elsewhere in British North America. Of the firm's management Glazebrook says that "having failed in their original design of taking traffic from the American west, they turned to the alternative of a through route on British Territory."<sup>203</sup> In this instance pursuit of the economic objective of cost reduction (never satisfactorily to be achieved by the Grand Trunk) can be seen to reinforce the political objective of creating an indigenous railway system (in this case the important transcontinental link in anticipation of which the Grand Trunk had purchased control of the Hudson's Bay Company).

For the political authorities of the day these adverse cost conditions created the following enduring dilemma: to bear the consequences (i.e. the necessity to allow higher railway rates or to provide more subsidies) of higher costs, or to seek to reduce them (i.e. by contemplating some sort of political or economic union with the U.S.). The fact that the choice between these

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<sup>203</sup> *Ibid.*, p. 3.

alternatives was essentially a political one must be remembered when the history of Canadian railway regulation is analysed.<sup>204</sup>

International political concerns (involving railways) originating well before Confederation survived it by many years. This particular aspect of our railway history is derived from more than the apprehensions of office-holders. Advocacy of transcontinental railways appeared in the 1860 Republican Party election platform, and the subsequent Republican victory was soon greeted by a massive program of rail subsidies.<sup>205</sup> The years that followed witnessed a rapid growth in territorial extent and ambitions of American railroad systems. Morton reports that much post-U.S. civil war annexationist pressure came from American railway interests,<sup>206</sup> and that the Canadian Pacific felt obliged to protect its position by helping Sir John A.

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<sup>204</sup>Morton (*op. cit.*, p. 376) emphasizes this political element in his comments on the conceptually related commercial union debate in the 1880's; "For commercial union or analysis clearly meant the adoption of the old American belief that the North American continent was destined to be united under republican government. Political union would not of logical necessity follow commercial union, but the latter would destroy the industrial development without which Canada could not hope to become a modern nation with North American standards of efficiency and power. A Canada so weakened would certainly become politically subordinate to the United States."

<sup>205</sup>Josephson, *op. cit.*, p. 52.

<sup>206</sup>Morton, *op. cit.*, p. 331. Allusion has already been made to the influence exercised in New Brunswick politics on behalf of U.S. railways.

Macdonald defeat the forces of reciprocity in the election of 1891. The military need for railways in Western Canada has already been mentioned; in view of the danger of American absorption or rail penetration of that region there existed a political need as well. In other words, in the West as well as elsewhere in the new federal state of Canada railway policy (and hence regulation) has been of political significance not only because of its internal effects (i.e. the provision of inter-provincial bonds) but also because of its external implications (i.e. the creation of a type of barrier against immersion in the United States).<sup>207</sup>

International financial considerations also had political repercussions which militated in favour of public regulation of railways. Because the railways were such vast undertakings for the meagre economy of colonial British North America a substantial portion of the capital sums required for their construction had to be raised in

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<sup>207</sup> Even in the 1920's one of the purposes of the post-World War I rail construction boom was anti-American. As Currie (*op. cit.*, p. 8) says of this episode: "All this physical plant was built with the triple objective of reducing the cost of transportation, opening up the country, and keeping trade flowing along Canadian routes rather than through the U.S." Throughout Canada's history it has been considered politically important that this country be self-sufficient in transportation.

financial markets beyond our borders.<sup>208</sup> The burden of Canada's railway debt was thus an international one. Since the fear prevailed that the fate of this debt could materially affect the terms under which other Canadian institutions (including Canada's governments, which had underwritten so much railway construction) received access to foreign capital markets, there evolved yet another political constraint on railway policy; it was deemed politically advisable to prevent railway conditions from adversely influencing the nation's international financial standing. The burden of canal and railway debt was a recurrent governmental problem even before Confederation. To alleviate this burden, a dual-purpose use of the tariff was made; besides its traditional use as a revenue producer it was also deliberately employed to enhance the traffic potential of the transportation system. Of the Cayley and Galt tariffs in the colonial Canadas Morton therefore says, "For the first time duties in Canada were raised not only to increase revenue but to give 'incidental protection' to the new industries which had sprung up in the 1850's with prosperity and the coming of the age of iron and steam with the railway."<sup>209</sup> These uses of the tariff persisted after

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<sup>208</sup>To cite but one example, the United Kingdom as early as 1862 offered to guarantee the loans with which the Intercolonial would be constructed.

<sup>209</sup>Morton, *op. cit.*, p. 311.

1867, which fact prompted Glazebrook to state that "the early tariffs of the Dominion were low, but within ten years they had begun to climb steeply. As a source of revenue the the tariff helped to finance the railways as in the old province of Canada; and as a protective measure it contributed to creating and directing traffic."<sup>210</sup>

Political concern about railway debt achieved renewed prominence during the First World War. Discussing the series of public railway acquisitions which laid the foundations of the C.N.R., Glazebrook cites the following motives: "the maintenance of an adequate transportation system, avoidance of a dislocation of credit, protection of the governmental investment in the companies and some degree of permanence in the solution."<sup>211</sup> Morton's evaluation of the relative importance of these various motives may be deduced from the following passage: "The great issue was not so much the national ownership of railways as the preservation of the national credit."<sup>212</sup> Certainly, the examples in this paragraph illustrate the gravity of the international political considerations underlying Canadian railway regulation.

Government - enterprise relationships comprise the

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<sup>210</sup> Glazebrook, *op. cit.*, p. 15.

<sup>211</sup> *Ibid.*, p. 156.

<sup>212</sup> Morton, *op. cit.*, p. 433.

final grouping of political reasons for Canadian railway regulation. This group can be subdivided into two areas: one embracing the political aspects of the ownership and management of this country's railways; the second dealing with certain political circumstances affecting the administration of national railway policy.

Because of the railways' status as national institutions of colonial origin the matter of their ownership and control was of great political significance. The fundamental question was the extent to which private enterprise would be entrusted with the task of building and operating Canada's railways. Its resolution was to generate much political controversy and its result was to be curiously equivocal.

Canada inherited from its colonial predecessors a fairly elaborate policy of financial assistance to private enterprise carriers. Mention must be made of a minister of the combined government of Upper and Lower Canada, "the supple and clever Hincks who originated the legislation which made the state the underwriter of private railway development in Canada."<sup>213</sup> That important departures from this precedent were made for political reasons is of considerable economic significance.

Political circumstances after Confederation ensured

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<sup>213</sup> *Ibid.*, p. 289.

that the hospitality accorded to privately organised railroads was neither automatic nor unconditional. Whether or not private enterprise operation possessed superior economic merit apparently ultimately counted for little in the political arenas in which early transportation policy decisions were made. Even before the newly formed country of Canada launched the transportation projects which the terms of union prescribed, the political - if not the economic - suitability of private companies to implement them was suspect. Many persons had interpreted Confederation as a machination of railway interests.<sup>214</sup> When this skepticism was voiced by parliamentarians and directed explicitly at the Grand Trunk<sup>215</sup> it may be construed as a premonition of Canadian political ambivalence on the question of carrier ownership.

This ambivalence is evident in the history of the Intercolonial. The system emerged as a government operation - a public utility of sorts - but this aspect of its fate was by no means certain from the start. Witness the following:

It is a somewhat remarkable fact that it was not until after construction had begun that a decision was reached as to whether the railway should be under public or private management. As late as the

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<sup>214</sup> *Ibid.*, p. 321

<sup>215</sup> Glazebrook, *op. cit.*, p. 4.

end of 1870 Macdonald still apparently contemplated having the Intercolonial operated by the Grand Trunk.<sup>216</sup>

Nevertheless as the prospect of private development failed to materialize satisfactorily, the decision in favour of public operation was confirmed. In fact, political unanimity prevailed on this particular issue, however, reluctantly. In Glazebrook's words: "Neither the Conservative nor the Liberal party welcomed public ownership in principle, but both were obliged to have recourse to it in default of an alternative; and the Liberals chose public ownership for the Intercolonial, but perhaps again from necessity."<sup>217</sup> From these political and ideological circumstances, the Intercolonial emerged as a "public work."<sup>218</sup>

Not so the CPR. In the matter of ownership a different solution was found for the transcontinental railroad to the Pacific. "From the start it was intended that it should be built and operated by a private company rather than the government."<sup>219</sup> The primary reasons for reliance on a private venture seem to have been simply the willingness of private entrepreneurs to undertake the task

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<sup>216</sup>*Ibid.*, p. 19.

<sup>217</sup>*Ibid.*, p. 61.

<sup>218</sup>Morton, *op. cit.*, p. 332.

<sup>219</sup>Glazebrook, *op. cit.*, p. 48.

and the generosity of government, whether direct (e.g. money or land) or in the form of the opportunity of exercising monopoly power. This aspect has been described in the following terms:

The Cabinet had already decided that, unlike the Intercolonial, the Pacific railway would be built by a private company. The construction of the line, however, would be subsidized by money grants and land grants from the fertile belt of the prairies.<sup>220</sup>

Simple as the decision to entrust the transcontinental railway to private enterprise may seem in retrospect it was fraught with political complications. Of the Liberal Prime Minister who succeeded Macdonald after the election of 1873, Morton says:

Mackenzie. . . had sought to get construction of the [Pacific] railway started in 1874 by a private company. In the [ensuing economic] depression none came forward. He then abandoned the Conservative plan of having one company build the whole line with the aid of grants of land and money. Instead he proposed to call for tenders from contractors for four different sections of the line, and to aid construction by a land grant of 20,000 acres a mile and a subsidy of \$10,000 a mile. The government might take over all or any of these sections on payment of the cost less the land grants plus ten per cent of the remainder.<sup>221</sup>

If nothing else this episode illustrates the imminence of any degree of public intervention. The ideological line

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<sup>220</sup>Morton, *op. cit.*, p. 346. Scandals connecting some of the early promoters of the CPR with American railway interests played a part in persuading the national government of the wisdom of this course of action.

<sup>221</sup>*Ibid.*, p. 353.

between private and public enterprise was of fluctuating political validity in Canada's early days.

All in all Canadian governments have preferred to assist railways rather than to construct, own and operate them.<sup>222</sup> Yet even in those situations where no recourse was taken to public ownership, political influence was capable of being exercised, albeit more sporadically and more tenuously through the medium of government assistance.<sup>223</sup> Because abuse of bond financing was the source of so many American railway scandals the subsidy approach found favour not only because it tapped a large and dependable flow of resources, but also because its use seemed more likely to avoid political embarrassments. Speaking against the U.S. style of railway financing and in implicit support of the Canadian subsidy method the CPR promoter, Lord Mountstephen, is quoted as saying:

The other plan, and the one I should have followed  
 . . . would have been to limit the borrowing of  
 money from the public to the smallest possible point  
 . . . to have looked for a return of our own capital  
 and a legitimate profit entirely to the growth of  
 the country and the development of the property. .

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<sup>222</sup> Glazebrook (*op. cit.*, p. 93) mentions that Canadian governments refused several offers of sale from private railway companies.

<sup>223</sup> More detail on the ubiquity of public assistance is provided elsewhere.

<sup>224</sup> Glazebrook, *op. cit.*, p. 74.

His views are in remarkable harmony with those of successive governments which, while keenly concerned about the growth and health of the national rail system, were not predisposed to assume total control.

Conventional money and land subsidies were not the only avenues of railway assistance explored by the national government. The National Transcontinental scheme represents a peculiar combination of public enterprise used to bolster private enterprise. Because so many of its principal features are explicable only in political terms the national Transcontinental affair is worth consideration in some detail:

The National Transcontinental from Moncton to Winnipeg was to be constructed out of public funds under the supervision of a board of three commissioners appointed by the governor in council, but the Grand Trunk Pacific Railway Company was to approve of the specification. On completion the National Transcontinental was to be leased to . . . that company . . . for . . . the fifty year term. The situation was paradoxical. On the one hand the government section was to be built as a part of the Grand Trunk Pacific, would be operated by the company, and to all intents and purposes would become a part of the Grand Trunk system. On the other hand, the National Transcontinental was ascribed the role of a common highway for those western railways which had no eastern outlet. It was in these terms that Laurier described it to the House of Commons. . . "It is our intention that this road shall be kept and maintained under our supervision so that all railways may get the benefit of it. . . ." This is a curious statement. In the first place, the government undertook construction only because the Grand Trunk was either unwilling or unable to do so; in the second place, the Canadian Northern had completed its line to Lake Superior;

and in the third place the line was to be handed over to one, not all, of the western railways.<sup>225</sup>

Several aspects of the National Transcontinental are particularly difficult to reconcile with the best economic interests of the country. In this regard the just criticisms which may be directed at it include: first, that the ("bridge") portion above Lake Superior was redundant; second, that its eastern portion represented an expensive duplication of the government-owned Intercolonial; and third, that it ignored the real needs of Western Canada by failing to serve the ports at Thunder Bay or Churchill.<sup>226</sup> Political in conception and extent the National Transcontinental must be counted a triumph of politics over economics.

The National Transcontinental was one of the ancestors of the Canadian National Railways. The political circumstances surrounding the birth of the latter demonstrate once again that in matters of such national importance as railways the federal government was both determined and flexible in its search for a workable policy. The crisis which precipitated the formation of the CNR was the impending collapse of the privately owned Grand Trunk Pacific and Canadian Northern systems, a collapse which would have disrupted Canada's transportation effort in

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<sup>225</sup> *Ibid.*, p. 132-133.

<sup>226</sup> *Ibid.*, p. 131-132.

time of war, and would have injuriously affected the country's credit. One of the principal purposes of the Union government of 1916 "was to deal with the reorganization of the railways."<sup>227</sup> Essentially, three solutions to railway over-building and financial instability faced the political authorities of the day; one was to provide further aid to the rail systems experiencing difficulties, the second was to allow the beleaguered companies to fall into bankruptcy (a course of action which Glazebrook surmises would have resulted in the provincialization of their operations); and the third was to nationalise and operate in the manner of Intercolonial.<sup>228</sup> Ultimately the third provided the basis for political action - the organization of the CNR. Following standard government practice, a Royal Commission was employed to lend moral strength to and deflect criticism from the result. Although many of the Drayton-Acworth Commission's proposals fell on deaf ears, its recommendation "that the two systems, the Grand Trunk and the Canadian Northern be united" formed the basis of the amalgamation which grouped those two systems along with the government owned Intercolonial and National Transcontinental under public control. The willingness of the national government to contemplate and carry through the acquisition of the two private systems incorporated into the CNR

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<sup>227</sup> Morton, *op. cit.*, p. 427.

<sup>228</sup> Glazebrook, *op. cit.*, pp. 151-152.

certainly underscores the political importance of transportation policy and its regulatory component; it also demonstrates that the preservation of a certain industrial ethos was not a significant priority.

Even after the basic composition of Canada's rail network had been established with the foundation of the CNR, political factors continued to have a bearing on the railway ownership question. Western Canadian political opinion, expressed in part by organized agriculture, has since World War I advocated public ownership of railroads.<sup>229</sup> The Progressive Party loudly denounced inter-war proposals to dismantle the CNR<sup>230</sup> and during the Depression the national government felt obliged to resist conflicting pressures either to absorb the CPR and amalgamate all the country's railways, or to permit the CPR in effect to lease the facilities of the CNR in return for a negotiated share of the net revenue of the combined operation.<sup>231</sup> In fact it is accurate to say that structural intervention has occurred only when political urgency, has so required. The economic performance of the nation's railway system - or of its several components - does not ever seem to have

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<sup>229</sup> See, for instance, Morton, *op. cit.*, pp. 442, 423, and 432.

<sup>230</sup> *Ibid.*, pp. 442-443. He notes that "The progressives. . . were devoted to the principle of public ownership."

<sup>231</sup> Glazebrook, *op. cit.*, p. 201-205.

prompted such intervention by itself.

In addition to the political decisions establishing the relationship between government and enterprise on the Canadian railway industry, a separate group of political influences beset the implementation of those decisions. The tendency of this latter group was to insulate the government against scandal and to delegate functions which could produce administrative or political difficulties.

As early as the harmonious subsidy period preceding Confederation apprehensions about the nature of the relationship between politics and the railway industry arose. Morton reminds us that "Ministers of the Crown sat on the Board of the Grand Trunk and it took even the Clear Grits and the Rouges a little while to realize that such a practice jeopardized the public interest."<sup>232</sup> Since that time successive Canadian governments have been scrupulous in devising buffers to interpose between themselves and the railroads.

Precautions were taken to insulate the building of the Intercolonial against controversy. "To avoid charges of political favouritism, the construction of the railway was

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<sup>232</sup>Morton, *op. cit.*, p. 293. It is worth noting that Sir G. E. Cartier was a railway lawyer and that Sir H. Hincks, the originator of the subsidy policy was personally implicated in the 1854 Grand Trunk and land sale scandals.

placed under a board of four commissioners. . . ."233

Although this measure may have served to deflect criticism it does not seem to have eliminated undesirable practices. In this respect Glazebrook quotes the *Toronto Globe* to the effect that "The Intercolonial (is) a great national scandal and the Grand Trunk a seething mass of public immorality."<sup>234</sup> He also notes that responsibility for the Intercolonial was assigned in 1874 to the Department of Public Works, a reversion to a more direct style of control.

The construction of the National Transcontinental was also afflicted with difficulties which engendered political controversy. "No friend of public enterprise can fail to be embarrassed by some aspects of the story of the National Transcontinental."<sup>235</sup> But its problems were swallowed up in the turbulent pre-World War I era and the eventual formation of the CNR, and its experience had no particular regulatory impact.

With respect to the private sector CPR a more indirect approach had to be taken. In Morton's words, "The charter did empower the Governor-General in Council to limit net earnings to ten per cent on capital, but it made no

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<sup>233</sup>Glazebrook, *op. cit.*, p. 18.

<sup>234</sup>*Ibid.*, p. 49.

<sup>235</sup>Glazebrook, *op. cit.*, p. 139.

other provision to protect the public interest."<sup>236</sup> However, because the Pacific railroad was a national institution and because it had consumed so much political energy and public money it could not long expect to remain immune from some degree of governmental supervision. Mention has already been made of the interval of Liberal rule during which the federal government assumed management of the line's construction. In 1880, after Macdonald's return to power a Royal Commission was constituted to investigate this interval. The Royal Commission was critical of the preceding government's record of involvement in railway operations on the grounds of poor personnel choice (patronage), sporadic political intervention, careless tendering procedures, and extravagance and corruption.<sup>237</sup> These findings bolstered the mandate of the private company formed in 1880 to build the Pacific line, and sounded a warning of expediency rather than principle against future government forays. On the other hand, discontent with the monopoly power which the CPR was eventually to enjoy led to political decisions to abolish some of the statutory privileges accorded the company,<sup>238</sup>

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<sup>236</sup> Morton, *op. cit.*, p. 362.

<sup>237</sup> Glazebrook, *op. cit.*, p. 70.

<sup>238</sup> *Ibid.*, p. 115.

to widen the regulatory powers of the privy council,<sup>239</sup> and in part, to participate in the Crowsnest Pass agreement.

The *ad hoc* approach exemplified in the two preceding paragraphs was not deemed sufficient. Early in Canada's history the national government recognised the need for a formal institutional link between itself and the railroads. This recognition was first given substance with the appointment of the privy council railway committee. In his comments on the Railway Act of 1868, Glazebrook notes that "For the continuous supervision of the private railway companies a special body was set up, the railway committee of the privy council. . . whose particular duty it was to ensure the safe operation of the railways. . . In 1886 the control of rates, which up to that time had been left to free competition (with the exception of maxima set in some of the early charters) was assigned also to the committee."<sup>240</sup> Beyond these quasi-political control measures, the government elaborated and bureaucratized its powers over the railways, by establishing a Department of Railways in 1878.<sup>241</sup> A year later responsibility for canals

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<sup>239</sup> *Ibid.* It should be noted that the expansion of the privy council railway committee's powers to embrace rate supervision occurred a scant year after the completion of the CPR.

<sup>240</sup> *Ibid.*, p. 93.

<sup>241</sup> *Ibid.*, p. 72.

was given to this department, an early step in the direction of multi-modal transportation authority.

Although it endured a quarter century, the Railway Committee of the Privy Council was not an altogether satisfactory regulatory device. Criticisms of its alleged defects eventually resulted in official scrutiny.

Glazebrook notes:

an inquiry made by Professor S. J. McLean. His two reports, presented in 1899 and 1902, made definite criticisms of the railway committee on the ground that it was political as well as administrative, was not sufficiently expert or permanent in personnel, and did not travel about the country.<sup>242</sup>

The form and function of the board were thus shaped at least in part by the judgement that the previous committee format was inappropriate for handling certain politically sensitive administrative functions. In substantially the form suggested by the Royal Commission, the Board of Railway Commissioners was to survive until 1967, although in 1938, its jurisdiction was expanded to accommodate certain other forms of transport which fell within the federal sphere, and its name consequently became the Board of Transport Commissioners.

The development of mechanisms to provide some degree of policy and even administrative control over private sector rail operations was not the only problem

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<sup>242</sup> *Ibid.*, p. 116.

facing the political authorities. The desire to own and operate railroads was definitely not the primary motive behind the national government's acquisition of the Canadian Northern and the Grand Trunk Pacific. Yet these acquisitions forced the government to devise a method of controlling its vast new properties. The Drayton-Acworth Royal Commission, whose recommendations comprise part of the organisational policy base of the national government's venture into transcontinental railroading, was unequivocal in its attitude towards direct government management. The Royal Commission's report reads in part:

We know of no country in the world where a democratic state owns and operates its railways in which politics have not injuriously affected the management of the railways and the railways have not had an injurious influence on politics.<sup>243</sup>

Because of these voiced fears, Drayton-Acworth recommended that the CNR (which was finally rounded out with the 1919 acquisition of the Grand Trunk) be "operated by an independent commission."<sup>244</sup> More specifically, "the commission proposed that the Board of Trustees which was to manage the system should be permanent and self-perpetuating."<sup>245</sup> This was not to be. Currie tells us that, "Instead the Board of Directors (as this body was

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<sup>243</sup> *Ibid.*, p. 153.

<sup>244</sup> Morton, *op. cit.*, p. 433.

<sup>245</sup> Currie, *op. cit.*, p. 7.

called when appointed) had fifteen members who were selected on a basis of regional representation - a method which necessarily gave weight to other considerations as well as those of business capacity or technical qualification."<sup>246</sup> This government decision on management composition effectively served notice that while the CNR would not necessarily be subject to transitory political whim, nor would it be accorded the commercial latitude available to a completely free enterprise. The recurrent need of the CNR to resort to Parliament for funds to cover its deficit has reinforced the element of subservience.

The Drayton-Acworth Royal Commission was anxious not only that railway management be immune from political interference, but also that it be allowed to operate according to essentially non-political criteria. As Currie says, "The Commission made clear beyond any shadow of doubt that the government-owned railways were to be run as a straight commercial concern."<sup>247</sup> Because the CNR was born with a heavy debt burden this injunction - although followed to a considerable extent - never had the full insulating effect expected of it.

The preceding many pages have concerned themselves

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<sup>246</sup> *Ibid.*

<sup>247</sup> *Ibid.* Insistence on some form or other of the "cash nexus" approach to railway operations has been a theme of many Royal Commissions, including the most recent Turgeon and MacPherson Commissions.

with the military, social and political reasons for railway regulation in Canada. Besides being disparate and cumbersome, these three combined probably constitute the most significant category of regulatory reasons. This category comprises much of the "public service characteristic"<sup>248</sup> which has led so many persons to question the validity of applying commercial criteria to national transportation systems. When regulation is taken in the broad sense (i.e. to mean legally sanctioned and defined intervention with discernible goals) this category can be seen to have roots which penetrate as deeply into national history as do the roots of the railway system itself. Primarily because of the enduring importance of the military, social and political factors analysed, the regulation of Canada's railways does not represent a recent addition to the transportation system it seeks to control - in that sense a superficial layer - but rather an intimately associated parallel growth.<sup>249</sup> Because of this association, the three

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<sup>248</sup> Meyer *et al.*, *op. cit.*, p. 5.

<sup>249</sup> Even in the United States, where railway regulation occurred relatively later and under what might be called duress, Phillips (*op. cit.*, p. 141) mentions that "Economic, political and social goals all are interwoven into the regulatory process." Further on (*ibid.*, pp. 443-444) Phillips depicts the American situation in a nutshell: ". . .many of the earliest state-granted railway charters uphold the point of view that railroads could be regulated in the public interest" but ". . .it took a considerable period of abuse on the part of the railroads to awake the public to the need of regulating them."

reasons help explain the extent, duration and style of the regulation they helped form.

A brief recapitulation of the three regulatory attributes of extent, duration and style is in order. The various examples of government subsidization, construction, and acquisition of railways do not represent regulation *per se*, but they are indicative of the lengths to which successive national administrations have been prepared to go to provide the military, social and political benefits which have come to be expected from Canada's railway system. The somewhat narrower field of railway regulation arose in this context and is consequently also of considerable extent. Its extent encompasses matters ranging from detailed and technical safety standards to questions involving the financial condition and future prospects of entire transportation systems. Binding the varied strands of regulation together, and providing them with a coherence and a rationale which might otherwise be lacking is what Glazebrook has called the "dominating principle. . . a belief that certain lines of railway were essential to the economic and political life of the country."<sup>250</sup> This belief, with its evident social and military adjuncts, has encouraged Canadian political authorities to endow the rail regulatory apparatus with greater powers of vigilance and

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<sup>250</sup> Glazebrook, *op. cit.*, p. 211.

control than would have been available if railways had been viewed as purely economic phenomena.

As well as helping explain the extent of Canadian railway regulation, military, political and social considerations have contributed to its durability. In one form or another regulation has been imposed on this country's railways for more than a century. The very fact that Canada is a federal state in which railways are a major national institution makes it likely that the regulatory function will remain significant even if their relative economic importance declines or if greater prominence is assigned to automatic market forces in controlling the economic performance of railways. Because railways are embedded so deeply in the national fabric, any federal government which sought to substantially reduce or relinquish railway regulation would be incurring serious risks.

In style Canadian railway regulation has developed to the point where it is administered on a quasi-judicial basis. Essentially, this situation represents a compromise between two opposing pulls. On the one hand the prospect of direct government construction or operation of railways has, for reasons cited, encountered enough political resistance to make the enforcement of statutory policy by relatively autonomous boards a politically preferable alternative. On

the other hand the prospect of extending to free enterprise as much latitude as it had been accorded in the U.S. was deemed equally unpalatable.<sup>251</sup> Recognition of the defects of free enterprise in directing the fate of a national rail system therefore also contributed to the delegation of regulation to quasi-judicial boards. In short, because of their military, social and political importance Canada's railways are regulated in a style which ostensibly precludes interference both from partisan politics and from narrow commercial interests.

Before the focus of this Part is shifted to other ostensibly more economic reasons for railway regulation, some final words of interpretation concerning the military-social-political category are in order. In evaluating either a railway system or a particular railway regulatory regime it is possible to consider military, social and political factors in the capacity of social costs and benefits. When the evaluation is done by weighing social costs against social benefits it is possible to offer either the contention that a railway system or scheme of regulation

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<sup>251</sup>In dramatic manner Josephson (*op. cit.*) has described the three dominant characteristics of nineteenth century American railway affairs; attempts at monopoly through merger and purchase; use of predatory tactics such as price wars; graft and political connivance. On his page 75 he quotes Henry Adams as saying: "The generation between 1865 and 1895 was already mortgaged to the railways and no one knew it better than the generation itself."

ruled as to extent of operations solely by private monetary costs and benefits is imposing social costs on the nation (e.g. a militarily inadequate rail system might impose the requirement of larger frontier garrisons) or the corresponding contention that such a system or scheme is failing to provide an appropriate level of social benefits (e.g. a commercially satisfactory rail network may not provide an appropriate level of social intercourse). Both contentions suggest how significantly decisions based solely on private monetary benefits and costs can be invalidated by considering the social benefits and costs inhering in certain military, social and political requirements. The invalidation of private transportation decisions (or non-decisions for that matter) has happened with sufficient frequency to demonstrate official acknowledgement - if not precise measurement - of these particular social benefits and costs. This somewhat haphazard casting of military, social and political factors in economic terms has not been accomplished without controversy; rather it has perplexed legislator and regulator alike. As Currie says:

A fundamental and persistent problem in the history of Canadian transportation is the interplay of two radically different concepts; straight business principles on the one hand and such matters as national unity, the movement of trade through Canadian ports, the opening up of new areas, defence, and avoiding the ruination of national credit on the other.<sup>252</sup>

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<sup>252</sup>Currie, *op. cit.*, p. 3.

In other words, although the military, social and political category accounts for much of the magnitude and persistence of Canadian railway regulation, it also has made regulation a much more contentious topic than it might otherwise have been.

Many sections of Canada's four major railway acts suggest the military, political and social purposes of railway regulation in this country.

First, certain over-riding and declaratory provisions must be mentioned. Section 91 of the British North America Act with its subsection covering "the regulation of trade and commerce", its subsection covering "postal service", its subsection covering "militia, military and naval service, and defence," and its residual provision constitutes the original source and ultimate sanction of the national government's powers of railway regulation. Section 145 of the same Act which stipulates the construction of the Intercolonial Railway, signifies the initial political and social significance of railways, and establishes constitutional precedent for deeper government involvement in railway affairs.

The railway acts themselves also contain declaratory provisions. The Acts of 1903, 1952 and 1966-67 each contain a clause (Section 6 in each case) declaring any "railway wholly or partly within the legislative authority of the

Parliament of Canada. . .to be a work for the general advantage of Canada." The absence of such a clause in the 1868 act is probably due to the fact that it would have been superfluous in the post-Confederation era of railway fever.

All four railway acts accorded special rights to railway companies in the matter of selecting and surveying routes and in the matter of acquiring right of way and facilitating construction. In the former case each act (Section 7(15), 1868; Section 118(a), 1903; Section 164(1)(a), 1952; and Section 164(1)(a), 1966-67) empowered railway companies to enter *any* Crown or private land "to make. . .arrangements. . .necessary for fixing the site of the Railway." In the latter case each act (Section 9, 1868; Sections 152-174, 1903; Sections 202-246, 1952; and Sections 202-246, 1966-67) enabled the railways to resort to expropriation of parcels of land of certain minimum dimensions (which varied from act to act) required for line and depot use. While expropriation procedures have differed (the 1868 and 1903 acts called for three arbiters; the 1952 and 1966-67 acts, one judicial arbiter), either cabinet (Section 122, 1903) or regulatory commission (Section 170, 1952; and Section 170, 1966-67) approval of major rail line location has been mandatory, as well as cabinet permission for the use of Crown Land (Section 7, 1868; Sections 134 and 135, 1903; Sections 192 and 194, 1952; and Sections 192 and

194, 1966-67), and regulatory commission approval of station location. Complementing the expropriation clauses in expediting railway construction was a provision (Section 141, 1903) requiring the granting of access of railway construction material over any land. For the same reason railway companies were empowered to "divert highways and waterways" (Section 164 (1)(1), 1952; Section 164 (1)(1), 1966-67).

Military, social and political purposes may also be construed in various railway acts' provisions regarding railway company operations. Railway companies have been placed under the statutory obligation to accommodate traffic and to provide modern, safe and efficient facilities for its carriage (Section 211, 1903; Sections 162 and 315, 1952; and Sections 162 and 315, 1966-67). The more recent acts (Section 280, 1952; Section 280, 1966-67) have even empowered the regulatory commissions to order the opening, and by implication, the operation of railways. Every act provides for the construction of network-filling branch lines under increasing amounts of regulatory supervision (Section 7(17), 1868; Section 118(R) 1903; Sections 185 and 188, 1952; Sections 185 and 188, 1966-67) while the role of the railway companies in the national communications system was enhanced by provisions allowing the construction and operation of telegraph and telephone

facilities (Sections 192 and 193, 1903; Sections 164 (1)(0) and 372, 1952; and Sections 164 (1)(0) and 372, 1966-67). In recognition of the railways' special status as national institutions it was eventually deemed necessary to require them to pay competitive or "fair and reasonable" wages (Section 247, 1952; Section 242, 1966-67). And finally in tribute to the essential nature of railway transportation, its obstruction was subject to penalties and its protection was assigned to a special class of railway constables (Section 49 and 72, 1868; Section 241, 1903; Sections 456 and 457, 1952; and Sections 456 and 457, 1966-67).

Military, social and political purposes are conceivably also reflected in a number of statutory measures creating regulatory power over relationships among railway firms. Canada's first railway act (Section 7(15), 1868) authorized any line of railway "to cross or unite with other Railways" at any point. Subsequent Acts perpetuated this provision (Section 118 (a), 1903; Section 164 (1)(e), 1952; and Section 164 (1)(e), 1966-67) but were more elaborate in implementing it. The 1903 act (Section 177, 1903) forbade such junctions or crossings without regulatory commission approval, while the two later acts empowered regulatory commissions to approve or order intersections, and in the latter case to distribute consequent costs among benefitting users and carriers (Section 255 and 256, 1952;

Sections 255 and 256, 1966-67). Amalgamations (Section 153, 1952; Section 153, 1966-67), joint use of facilities (Section 196, 1952; Section 196, 1966-67), reciprocal running rights (Section 316, 1952; Section 316, 1966-67) and traffic exchange between carriers (Section 284, 1903; Section 156, 1952; and Section 156, 1966-67) have also been subject to regulation. In the two more recent acts the presentation of obstacles to continuous carriage of goods by rail has been expressly prohibited, (Section 345, 1952; Section 345, 1966-67) and an obligation to provide facilities for joint movements has been created (Section 319 (4 and 5), 1952; Section 319 (4 and 5), 1966-67). These two acts also established regulatory procedures to determine joint tariffs on movements performed by several rail carriers (Section 342, 1952; Section 342, 1966-67). Although it is legitimate to construe many of the measures mentioned in this paragraph as being directed primarily at the control of monopoly, they all may nevertheless be associated with the conception of the country's rail network as an indispensable national institution, whose fragmentation would be at the nation's peril.

A series of emergency provisions and special concessions emphasize the military, social and political purposes of Canadian railway regulation. Each major railway Act (Section 22 (1 and 4) 1968; Section 232, 1903;

Section 356, 1952 and Section 356 (1 and 2) (1966-67) has obligated every railway company to devote its "whole resources" to military police or postal carriage, when called upon to do so. The 1966-67 act stipulated that the rates paid in respect of this emergency carriage be "compensatory" (Section 356 (2), 1966-67), while its three predecessors empowered the cabinet to determine remuneration. Similar provisions applied to the emergency use or construction of railway company owned or operated telegraph faculties (Section 22 (2 and 3), 1868; Section 233, 1903; Sections 382 and 383, 1952; and Sections 382 and 383, 1966-67). In addition, the two more recent acts (Sections 350 and 351, 1952; and Sections 350 and 351, 1966-67) extended free or reduced rate privileges to politicians and government employees, settlers, clerics, etc.

To further reinforce the ability of the railway regulatory system to respond to military, social and political needs, a number of extraordinary provisions exist whose effect is to incontestably establish over-riding ultimate political authority in all railway matters. One of the standard railway act clauses (Section 246, 1903; Section 296, 1952; and Section 296, 1966-67) makes stipulations about railway company by-laws, rules and regulations to the effect that "All such by-laws, rules and

regulations, except such as relate to tolls and such as are of a private or domestic nature and do not affect the public generally shall be submitted to the Governor in Council for approval." Approved by-laws etc., were thereafter binding on all persons and each railway company was given special powers to enforce them generally (Section 248, 1903; Sections 297 and 299, 1952; Sections 297 and 299, 1966-67). While these clauses may appear to afford gaps in political powers, additional all-encompassing powers of political intervention also existed, empowering the federal cabinet to "vary or rescind any order, decision, rule or regulation" of the respective regulatory commissions. (Section 44 (2), 1903; Section 53 (1), 1952; and Section 53 (1), 1966-67).

These statutory references have been presented to suggest the opportunities for the pursuit of military, social or political goals either through or in legitimate circumvention of the regulatory process, rather than to discuss the exact details of what these military, social, or political purposes might be.

This chapter has explored the military, social and political background of Canadian railway regulation seeking evidence of this background's influence on the desirability of linking rates to costs. Such an exploration amounts to a testing of the latter half of the dual hypothesis.

In two respects this chapter's contents tend to

support the hypothesis. In the first place, the evidence suggests that there are few, if any, social, political or military reasons for tying rates to costs. In the second place, the many military, economic and social factors militating against the tying of rates to costs are enumerated and discussed.

## CHAPTER XI

### NATIONAL ECONOMIC DEVELOPMENT ASPECTS

One of the most important single purposes of Canada's rail network, the public policy which guided its formation and development, and the system of regulation supervising its operations has been the pursuit of national economic goals. Much of the first Part was devoted to theoretical discussion of the various ways in which rail transportation affects the location and level of economic activity. The more historical discussion implanted in this chapter will be confined to two closely related facets of demonstrated significance. The first involves the geographic extension of the benefits of railway transportation; that is, the physical expansion of the rail system. The second involves the influence of rates on national and regional economic activity. The combined impact of these two facets can be expressed in terms of the pattern of cost-distance relationships in Canadian rail transportation. The crucial social and economic significance of this pattern requires that its control (to whatever extent) be considered a major regulatory purpose.

Because the revolutionary initial impact of railways<sup>253</sup> made the topic of rates less sensitive at the beginning than it was later to become, and because railway construction generally precedes rate setting it is advisable to consider the question of geographic expansion first. Nevertheless many of the comments about geographic expansion - especially the introductory ones - are also applicable to the question of rates.

"Transportation, because of its pervasive function in a nation as widespread as ours, is often the first means used in attacking locational problems associated both with distance from markets and the resource base".<sup>254</sup> Because of the recent origins of this country, Currie points out that "the opening up of new areas" was an important part of that function. It is therefore not surprising that the advocacy of railway expansion was at one time or another a major feature of the policy of each major national political party.<sup>255</sup> This advocacy helps explain what Morton calls "the abundant largesse of the railway era".<sup>256</sup>

This era of railway expansion began before Canada's

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<sup>253</sup>For instance, it has been said of the impact of railways in those early days that "goods moved over long distances at prices infinitely cheaper. . ." *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961) Vol. I, p. 35.

<sup>254</sup>*Ibid.*, p. 33.

<sup>255</sup>Morton, *op. cit.*, p. 346.

<sup>256</sup>*Ibid.*, p. 271.

constitutional birth. For colonial British North America the principal economic events of the late 1840's were increasing disappointment with the prospects of canal transportation and the diminution of trade ties with Britain implicit in the 1846 abolition of the corn laws. These two maladies helped create the atmosphere in which it came to be thought that "the railway was a matter of commercial life or death."<sup>257</sup> According to Morton even the brief experience with accelerated railway development in the period preceding the Reciprocity Treaty (1854) was enough to produce the conviction "that railway construction to develop the export trades was the key to prosperity."<sup>258</sup>

The relationship between exports, transportation and economic growth has sometimes been expressed in terms of the 'staples theory'. Glazebrook's version of that theory's application to Canadian history is worth noting:

The mutual interdependence of railways and general economic development is a theme which runs through the history of the Dominion, and one which played no small part in its creation. To make possible a stable economic structure a sufficiency of natural resources was required and was found in the wheat and grazing lands of the west, the lumber of British Columbia and the central and eastern provinces, the fisheries of the Maritime Provinces and British Columbia, and the rich mineral deposits of the Canadian Shield and the mountains of British Columbia. These, with the mixed agriculture of the east and centre, formed a basis of staples on which a superstructure of financial institutions,

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<sup>257</sup> *Ibid.*, p. 289.

<sup>258</sup> *Ibid.*, p. 271.

industrial concerns, and transportation facilities could be built. It is possible then, to argue that confederation was not an illogical step taken by embarrassed politicians, but the fulfillment of an old dream, made possible by the linking of economically complementary areas by railways.<sup>259</sup>

One of the important things about the process depicted in the preceding passage is the instigating role of railways; to quote Glazebrook again: "The growth of railways did not spring from an existing prosperity but from a belief, generally held, that Canada could progress only if an adequate transportation system was built up."<sup>260</sup>

In testimony to the railways' contribution to Canada's growth (e.g. one measure is that the country's population grew by 35% between 1900 and 1910<sup>261</sup>) the 1961 Royal Commission on Transportation asserts that:

the railways in large measure paced the development and settlement of the nation. Had public and private investment in railways been more cautious the rate of national growth would have been less.<sup>262</sup>

Confederation found the two central provinces with a fairly well developed rail network. The primary emphasis in the field of railway expansion was in the direction of establishing links with the nation's periphery. In fact

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<sup>259</sup> Glazebrook, *op. cit.*, p. 5.

<sup>260</sup> *Ibid.*, p. 92.

<sup>261</sup> *Ibid.*, pp. 119-120.

<sup>262</sup> *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Volume II, p. 36.

Glazerbrook divides the entire history of ensuing railway development into three phases: first, the building of transcontinental lines; second, the provision of branch lines to fill out the transcontinental system; and third, the construction of northern lines.<sup>263</sup>

The initial transcontinental projects were the Intercolonial and Pacific railroads. Both these roads were supplemented by branch lines. Since the growth of the western branch system entailed much larger geographic additions to the national economy, and since this chapter is concerned with illustrative rather than comprehensive analysis, the following comments about the branch line situation will be derived from Western Canada's experience.

History shows that in many instances railway management's enthusiasm for branch line construction was considerably less than governments' or the public's. One of the underlying causes of the Manitoba Charters controversy (which eventually resulted in the nominal abolition of the CPR's monopoly privilege) was the CPR's apparent failure to create a satisfactory branch line system in that province.<sup>264</sup> The consequence of this reluctance on the part of the management of the large trunk lines was that branch line or 'feeder' line function often came to be performed by small independent lines (many of which were subsequently

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<sup>263</sup> Glazerbrook, *op. cit.*, p. 192.

<sup>264</sup> Morton, *op. cit.*, p. 373.

consolidated or absorbed).

Even in the case of very major mileage extensions government enticements were required to encourage construction by the large firms. In the case of the 330 mile long CPR Crowsnest Pass line from Lethbridge to Nelson, subsidies of \$11,000 and 20,000 acres of land per mile were provided.<sup>265</sup> Putting the implications of this particular geographic extension of Canada's rail system into economic perspective, Morton has said:

In this agreement the development of Canadian resources was tied to the encouragement of the east-west flow of trade.<sup>266</sup>

Instances of public subsidization of main or subsidiary rail lines (however defined) abound. One of the main reasons was that the prized combination of geographic and economic expansion which began as a goal of the nation and its railways, soon acquired many of the characteristics of necessity.

It would appear that, even in the colonial period, the relatively ambitious railway schemes which arose in what is now central Canada would face significant difficulties if confined to carrying the traffic then generated within that region. Initially, more traffic of American origin was sought to bolster revenues and reduce average costs for

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<sup>265</sup>T. H. Harris, *Economic Aspects of the Crowsnest Pass Rates Agreement* (Toronto: Macmillan, 1930), pp. 2-3.

<sup>266</sup>Morton, *op. cit.*, p. 394.

these Canadian rail enterprises.<sup>267</sup> Much public and private money was devoted to this effort and the subsequent failure of the Canadian trunk lines to secure such a portion of American business as would repay their generous expenditure was a great disappointment. This episode suggests the resistance which any attempt to tie rates strictly to costs would have encountered.

Efforts at solving the traffic generation problem were then directed within the boundaries of British North America. The two methods adopted were geographic extension of the railway system and a protective tariff policy. Significant rail penetrations into hitherto economically remote areas (the Maritimes and the West) began almost before the ink was dry on the BNA Act. And the Dominion's tariff rose steeply in the decade following 1867. Besides contributing to federal government railway subsidies, the higher tariffs were instrumental in "creating and directing traffic."<sup>268</sup> The two methods were therefore mutually reinforcing, but the chronic low-volume characteristic of Canadian railway operations would probably have made cost-based rates intolerably high.

The pivotal assumption underlying the selection of railway extension as a means of generating traffic is

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<sup>267</sup> *Ibid.*, p. 291.

<sup>268</sup> Glazebrook, *op. cit.*, p. 15.

expressed by the 1961 Royal Commission on Transportation in the following manner:

The private and public costs of building and operating the network were necessary pre-conditions of national growth, and, it was assumed, would be rapid when this growth took place.<sup>269</sup>

In more modern terms,<sup>270</sup> a cooperative effort between the public and private sectors was to provide a massive injection of social overhead capital which in turn was to be relied upon to produce significant economic growth. The benefit to the nation was to be the growth - a most esteemed commodity in an era ballyhooed as the beginning of "Canada's Century."<sup>271</sup> The benefit to the managers and/or suppliers of the capital was to be derived from the ultimate internalization of the lavish external economies then attending railway provision. A contemporary appraisal of the latter benefit from railway management's point of view is to be found in Lord Mountstephen's recorded expression of confident desire "to have looked for a return of our [i.e. the CPR's] own capital and a legitimate profit entirely to the growth of the country and the development of the

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<sup>269</sup> *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. I, p. 36.

<sup>270</sup> Here reference may be made to those of Hirschman's concepts aired in the first Part.

<sup>271</sup> Glazebrook, *op. cit.*, p. 119.

property."<sup>272</sup>

One of the significant reservations attached to the use of social overhead capital as the leader in an economic growth sequence is the already noted permissive nature of social overhead capital in this role. In a market context this characteristic gives rise to the risk that the installation of a railway will not automatically be followed by a determinable quantity or quality of other forms of investment or economic activity. Although a remarkable degree of economic growth accompanied the extension of Canada's rail system, the traffic and revenue accretions generated by that growth never fully met the expectations which in part had originally spurred that geographic extension. Thus, in the 1920's when Canada's rail network had practically reached its full geographic extent, the President of the CNR uttered the plea that "it is a matter of building up the country to support the Railways."<sup>273</sup> His remarks sound like an ironic paraphrase of Mountstephen's proud assertion; they also point out the elusiveness of the dream of *low* cost-based rates.

In examining the relationship between national geographic expansion (which may be assumed to be positively related to railway network extension) and national economic

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<sup>272</sup>*Ibid.*, p. 74.

<sup>273</sup>*Ibid.*, p. 185.

growth (which may be assumed to be positively related to rail traffic generation) both as a national goal and as a rail industry necessity it is again illuminating to look at Western Canada's experience. This experience demonstrates some of the perils of railway extension.

In the closing decade of the nineteenth century the popular pressure for and belief in railway expansion was qualified by the desire for increased competition in the West's rail industry. "The current view was that, as the settled belt was widened, railways should be established to serve the new areas as the CP served the longer-settled area in the south. . .there was general agreement that one railway was not enough."<sup>274</sup> This consensus evoked a sympathetic response in Ottawa<sup>275</sup> - a response manifested in the eventual approval and promotion of two additional major trunk lines. Of these lines and their appendages it may validly be said: "With public assistance in construction, service was extended by branch lines into areas where by strictly commercial considerations no railway would have gone."<sup>276</sup> Taking this argument one step further, Glazebrook has said "The West secured unlimited competition at

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<sup>274</sup>*Ibid.*, p. 124.

<sup>275</sup>*Ibid.*, p. 125.

<sup>276</sup>*Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. I, p. 36.

the cost of over-building."<sup>277</sup> In view of the CPR's historic reluctance to build branch lines, there was undoubtedly some justification for using other firms to expand the West's rail network, although one of the costs associated with this increased "competition" was a diffusion of control over railway construction plans.

Regardless of the number of firms participating, the extension of railway mileage throughout the Prairies did play a major role in the expansion of that area. Perhaps the most striking quantitative indicator of that growth was the region's increase in population from 420,000 in 1901 to 1,323,000 in 1911.<sup>278</sup> Dramatic as this population increase figure appears, it does not necessarily represent any net social or economic improvement for the nation as a whole. Subsequent research has strongly suggested for example, "that the wheat boom between 1901 and 1911 scarcely lifted Canadian NNP per head but merely expanded the economy sideways across the continent."<sup>279</sup> Nevertheless, a strong association was demonstrated between railway extension on the one hand, and national economic and geographic growth, if not economic development in the fullest sense of the term. This association was perceived and an exaggerated

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<sup>277</sup> Glazebrook, *op. cit.*, p. 135.

<sup>278</sup> Morton, *op. cit.*, p. 403.

<sup>279</sup> Samuelson, *op. cit.*, p. 781.

notion of its efficacy exerted great influence over rail policy.

The most spectacular embodiment of this influence was the abortive National Transcontinental project. To the reputed power of railways to spur economic growth must be attributed the government's apparent conception of the National Transcontinental as "a common highway for those western railways which had no eastern outlet".<sup>280</sup> The fact that the federal government was soon obliged to relinquish its original aim of leasing the line to the Grand Trunk Pacific company<sup>281</sup> does not indicate official repudiation of the use of railways as instruments of economic expansion as much as it indicates the failure of the resultant expansion to generate sufficient traffic to satisfy commercial criteria of railway operation. In that latter sense, with its emphasis on private rather than social costs and benefits, railway over-building certainly does seem to have occurred.

Even after World War I, when in the opinion of many<sup>282</sup> the geographic portion of the task of nation-building had been virtually completed, a rapid pace of branch like construction continued. Public pressure<sup>283</sup> in

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<sup>280</sup> Glazebrook, *op. cit.*, p. 132.

<sup>281</sup> *Ibid.*, p. 150.

<sup>282</sup> e.g. Morton, *op. cit.*, p. 437.

<sup>283</sup> *Ibid.*, p. 446.

combination with the expansionist inclination of early CNR management provided the impetus for the branch line boom which, especially in Western Canada, was characterised by a substantial number of costly "invasions and counter-invasions" between the CNR and CPR.<sup>284</sup> In spite of the previous decade's serious railway crisis, the philosophy underlying the CNR's inception and subsequent involvement in these events has been interpreted by the 1961 Royal Commission on Transportation in the following terms:

The amalgamation of these lines into a publicly-owned company with instructions to operate in the normal commercial manner indicates an assumption at that time that total traffic eventually would grow to absorb excess capacity in the system as a whole and national purpose would be furthered through that type of cross subsidization which the rate structure permitted in order to support those segments of the system where traffic density was too light.<sup>285</sup>

Presumably similar thinking motivated the CPR's participation in post-World War I branch line building. Thus the idea that a railway, regardless of its cost or extent, was automatically both the instigator and the ultimate joint beneficiary of economic growth proved difficult to modify, let alone dispel. One legacy of this approach was the federal government's 1967 decision to forbid abandonment of about 17,000 miles of track in Western Canada at a time when

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<sup>284</sup> Glazebrook, *op. cit.*, p. 194.

<sup>285</sup> *Royal Commission on Transportation* (Ottawa: Queen's Printer 1961), Vol. I, p. 25.

abandonment applications for over 4000 miles were outstanding.<sup>286</sup> Another legacy of that idea has been the persistent difficulties which the major railways have encountered in their endeavours to tie rates to private monetary costs, if only at the most general level.

The preceding several pages have provided a series of examples selected to illustrate the historical importance attached to railway expansion as the agent of economic and geographic growth. The purpose of these examples is not to establish geographic expansion as a primary or present purpose of Canadian railway regulation but rather to indicate that it did have its day and to give a clearer idea of the economic, political and social milieu in which other regulatory purposes operated. Among other things the milieu depicted herein was not a simple, static one in which regulatory attention could safely be focussed exclusively on the relationship between costs and prices. In particular the illustrations amplify the context of two of the more obvious regulatory purposes, namely the protection of carrier finances (because of the costs imposed on carriers by geographic expansion) and service maintenance. They also yield insight (again because of the costs associated with geographic extension) into the following related topic of rates.

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<sup>286</sup>Currie, *op. cit.*, p. 24.

Besides providing a nation-wide framework by which physical transfers were accomplished, the railway system also provided the prices which determined for the rail service users the economic conditions under which these transfers occurred. In Canada there has never been a comprehensive national policy aimed at the systematic exploitation of the locational possibilities inherent in the power of railway rate regulation, whether by tying rates to costs or otherwise. Instead the process of railway rate regulation has been at the focal point of the conflict between a number of rate-making criteria. While it is sufficient for the purposes of this paper to demonstrate that pressure for a railway rate system based exclusively on cost was not the sole force animating Canadian railway rate regulation, it is nevertheless instructive to explore the major pricing criteria with locational implications. Emphasis will be placed on locational aspects, always bearing in mind the association between the location, the level, and the composition of economic activity, as discussed in the first Part.

Before an historical analysis of some of the regulatory aspects of railway rates can proceed, several important generalizations about the influence of rates on patterns of economic activity must be mentioned. The first Part presented a locational model predicated on the cost

minimization motive. In this model locational tendencies were determined by the influence of transfer rates on the locational preferences and decisions of transfer service users. To a very considerable extent the strength of this influence can be assumed to be directly related to the general level of rates. For instance, when transfer rates are zero, the distance-associated costs incurred by user firms are also zero. In this situation the model's locational tendencies do not operate because firms' locations are matters of indifference and locational preferences have little economic basis. However, as transfer rates rise and consequently as the distance-associated cost incurred by user firms comes to form a larger relative share of total costs, locational preferences (which, as the first Part noted, so often favour market orientation) have an increasingly significant economic basis and individual firms' locational choices become increasingly constrained. The first generalization, then, is that higher rates will tend to reduce locational flexibility within the national economy and among its regions, frequently with cumulative, self-reinforcing effect.

The second generalization involves some of the criteria by which rates are judged. The ability of rates to influence location operates independently of the industrial

structure which generates them. Thus a given rate will have the same effect on locational preferences regardless of whether it was set by a purely competitive transport industry, a monopoly, or an oligopoly, or for that matter, by government decree. Where locational influence is the transfer system's (or its rail component's) objective it is more difficult to judge the "correctness" - or, to use the more common expression, "reasonableness" - of a particular rate than when the objective is, say, efficiency. In so far as the money costs incurred by the transportation enterprise accurately reflect opportunity costs, and in so far as the opportunity costs, fully incorporate all pertinent social considerations (however determined) the cause of efficiency in its wide economic sense is best served when rates correspond to costs. At least in certain theoretical circumstances this correspondence can be both automatic (i.e. when pure or perfect competition prevails in the transportation industry) and socially desirable (when, in keeping with the Theory of the Second Best, pure or perfect competition also prevails throughout the economy). However, even in theory, let alone in practice, there exists no such automatic mechanism to reconcile rates with the objective of locational influence. The second generalization therefore is that as long as there is any divergence in favour of the latter between the objective of

efficiency and the objective of locational influence, the standards by which transfer rates are judged become more controversial. This element of controversiality figures prominently in Canadian history.

With these generalizations in mind it is advisable to consider a number of historical observations bearing on the several facets of "reasonableness" with regulatory implications. The matter has a complexity beyond a simple choice between "high" and "low" rates.

Although the Turgeon Royal Commission advocated "the idea that railways are to run like the post office, that they are to make a profit if they can, but that the objective in setting tolls is to cover costs and also help the country's economic life,"<sup>287</sup> the concept of reasonableness in rates has frequently been interpreted primarily in terms of carrier financial needs.

Volume II of the 1961 Royal Commission on Transportation contains the assertion that one fundamental economic assumption underlying the construction of Canada's railroads was that they would face no significant adverse competitive pressures on their net revenue.<sup>288</sup> Given the railway's technological supremacy which prevailed in most parts of Canada at least until the inter-war period, this assumption

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<sup>287</sup> *Ibid.*, p. 15.

<sup>288</sup> *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. II, p. 24.

appeared plausible. Because of the economics of railway operation (in particular the wide discrepancy between marginal and average costs) this assumption was nevertheless fallacious because of competitive net revenue inroads from both intra-modal (ie. the nineteenth century rate wars in Central Canada) and increasingly later from inter-modal sources. These inroads created the need for a definition of "reasonableness" emphasizing the adjustment of rates for the purpose of protecting carrier net revenues.

This definition or concept of "reasonableness", and the attitude to the propriety of rates which it engendered, is evident both in the formation of the railway rate structure and in the method by which major subsequent rate increases were added. In the first place the rate structure came to be erected on a foundation of price discrimination and internal cross subsidization designed to encourage long-distance bulk shipments while simultaneously providing adequate revenues to the railways. The 1961 Royal Commission on Transportation has described the origins, purposes, and characteristics of the rate system in the following manner:

The railways. . .obtained a volume of traffic which might not otherwise have come into being and they did so with the active encouragement of the Federal Government which saw in the low-rate policy a further means of stimulating the development of primary production in Canada. The rate classification system which developed on this basis allowed rates to vary from a low of as little as one-half

cent up to as much as ten cents per ton-mile and they bore little relation to the cost of performing the service; a rate was considered "just and reasonable" if it displayed what seemed to be an equitable relationship to the remainder of the rate structure. . .It was a system that seemed eminently suited to the needs of the developing Canadian economy as well as to the needs of the railways for the maximum volume of traffic consistent with adequate revenue returns.<sup>289</sup>

Given these historical circumstances it is reasonable to infer that the rates yielded by this early structure were reasonable because the structure itself was a reasonable instrument for realizing the specified national goals<sup>290</sup> in spite of its monopolistic attributes. Coincidentally many of the yielded rates were low because in the early days the entire apparatus of internal cross-subsidization was intact.

As cost increases and the competitive erosion of some of the high elasticity markets vital to the successful operation of an internal cross-subsidization system threatened the railway net revenues, series of rate increases ensued, having as one of their primary purposes the restoration of net revenues to a satisfactory level. The method by which major railway rate increases were applied eventually followed the pattern known as the

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<sup>289</sup> *Ibid.*, Vol. I, p. 5.

<sup>290</sup> Although allegations of rate injustice helped instigate the 1880's Manitoba charters episode, Glazebrook (*op. cit.*, p. 115) says that despite the remedial gestures of the federal government, "the real object of the struggle was not gained by the province, for the freight rates remained much as they were."

"horizontal method". Because of its importance in Canadian regulatory history some features of the operation and incidence of the horizontal method deserve closer examination.

In simplest terms the horizontal method operated on a system of request, review and approval. The requests were formulated and submitted by the railway companies, while the review and approval functions were vested in the regulatory authority (the Board of Railway Commissioners and its successors). Although the financial needs of the CPR were customarily used as the regulatory yardstick, and although the Angus Royal Commission recommended the application of the "rate-base-fair-return" approach to the CPR,<sup>291</sup> each request was nevertheless considered in *ad hoc* fashion "on its own merits". Currie offers the following brief outline of the criteria used in the review process:

When dealing with. . . rate cases the Board had to concern itself with such questions as how much net revenue the railways should be allowed for interest and dividends, whether the rate level should be set by the financial requirements of the high or the low cost road, and how promptly rates should be brought in line with changing costs of operation on the one hand and the market value of goods being shipped on the other.<sup>292</sup>

In the matter of application, the rationale of the horizontal method was that it levied the same percentage

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<sup>291</sup>Currie, *op. cit.*, p. 15.

<sup>292</sup>*Ibid.*, p. 7.

increase upon each affected rate and in that mathematical sense was therefore "equitable". Lest it be thought that the horizontal method's ostensible mathematical symmetry made it irreproachable, three important qualifications must be mentioned.

The first qualification to the desirability of the horizontal method is that the increases it produces can be no more "reasonable" than the basic rates to which they are added. Since the basic rate structure was "reasonable" in the eyes of the carriers, so were the subsequent horizontal increases. This attribute of "reasonableness" was enhanced by the method's simplicity and convenience. As the 1961 Royal Commission on Transportation said, "The railways. . . professed to know of no other method which, within the regulatory and institutional fabric, is as satisfactory to administer."<sup>293</sup> The converse of this argument is obvious.

The second qualification is that the uneven impact of transport competition made impossible the uniform application of granted horizontal increases. As this competition intensified, this lack of uniformity was aggravated to a point which persuaded the 1961 Royal Commission on Transportation to say that "a horizontal increase is horizontal in name only - it does not apply

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<sup>293</sup> *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. I, p. 68.

evenly across the entire rate structure, but is applied selectively. . .the less exposed to competition a type of traffic is the more likely it is to have the full increase applied to it."<sup>294</sup>

An even more fundamental qualification is the third one. Even if no competitive aberrations compromised the uniform application of a horizontal rate increase, all differentials between rates would be magnified by the same percentage as the rates themselves. Although the aggravation of rate differentials can be defended as a manifestation of the proposition that higher rate levels increase the urgency of locational decisions, this inevitable by-product of the horizontal method further diminished its popularity, especially where its application appeared to (or actually did) create or widen the gap between certain individual rates and costs.

The combined effect of these three qualifications was sufficient to prompt the following condemnation: "The tool of the horizontal percentage rate increase is self-defeating for the railways as well as inequitable for the shippers still dependent on the railways."<sup>295</sup> The retention of this tool testifies to the importance of the carrier protection motive, as well as to the apparently low

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<sup>294</sup>*Ibid.* p. 15-16.

<sup>295</sup>*Ibid.*, p. 70.

priority assigned to the creation and maintenance of a cost-based rate system.

The influence of carrier-oriented standards of "reasonableness" was great, but not sufficient to overwhelm standards associated with the aspirations and needs of rail service users. In fact the relative importance of the user-oriented standards grew with the passage of time.

It is most difficult to precisely define and rank the criteria which would make railway rates "reasonable" in the eyes of purchasers. Nevertheless several major considerations can be identified, including: the relationship between rates and costs for particular services, or for services in general; the varying relationships between rates and distances; the relationship between rates and other costs incurred by rail service users, and the industrial structure under which the rates were established.

Regardless of which criteria of "reasonableness" prevailed in the minds of rail service users, there can be little doubt that Canada's rail rate structure - both in its origin and its evolution - failed their tests of "reasonableness" in many particulars. Yet the awareness of this failure did not dawn immediately.

Witness the following:

In the earliest days of the railways, freight rates were not based on well-defined principles. Individual rates were sometimes put into effect on

an experimental basis and at times special agreements were worked out between carriers and shippers. The innovation of rail transport. . . was so superior. . . that little or no complaint (occurred) for the first 25 years. . . the railways were under no compulsion to provide a theoretical justification for the rates in force.<sup>296</sup>

Certainly the early Canadian rate structure and its subsequent additions (including those imposed by the horizontal increase method) violated many, if not all, of the user-oriented criteria of "reasonableness". When the Grand Trunk published Canada's first (1874) railway price list then called the "classification of commodities", it was based mainly on "charging what the traffic will bear."<sup>297</sup> The subsequent (1884) "Canadian Freight Classification" was also based on "ability to pay" but also incorporated some "geographical equalization" in response to adverse reaction to some of the previous rate relationships which it attempted to codify.<sup>298</sup> Various Railway Act provisions relating to rate structure formation and publication are mentioned elsewhere.

Definite cause for complaint was discernible and discerned in the level of some rates, in the relationships between some rates and in the arbitrary manner in which rates were promulgated by apparently unchecked monopolies.

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<sup>296</sup> *Ibid.*, Vol. II, p. 44.

<sup>297</sup> *Ibid.*

<sup>298</sup> *Ibid.*

The first major eruption of these complaints occurred (as related in several other places in this Part) in Manitoba in the 1880's. In his analysis of the incident Glazebrook documents a series of alleged rate-setting abuses. His subsequent comments on the public impact of these alleged abuses are illuminating, and have already been mentioned. It is worth noting that reforms in the levels of rates or the methods of rate determination were not among the remedial measures adopted following the Manitoba uproar; nor did the investigations into rate protests (including a Royal Commission in 1888) through the late 1880's and early 1890's yield major changes calculated to make rates more "reasonable" for purchasers.<sup>299</sup> On the other hand, it is scarcely plausible to assert that the uproar could have been subdued simply by tying rates to costs.

Although evidence of the monopolistic practice of price discrimination abounds, it is difficult to gauge the extent to which the general level of rates diverged from the general level of costs associated with the provision of rail service to Canadian customers. Glazebrook's verdict on this issue does not suggest much of a divergence:

It was not that the Canadian railways charged an exorbitant rate per mile, but that the number of miles normally to be covered was large. Whether for internal or for export trade the Canadian

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<sup>299</sup> Glazebrook, *op. cit.*, p. 115.

producer or manufacturer had ordinarily to count on heavy transportation expenses, which fell unevenly according to geographic position.<sup>300</sup>

What this passage does suggest is the critical influence of the relationships among rates in determining the reasonableness of the rate structure from the users' point of view. Measures of rate reform designed simply to secure a correspondence between individual rates and costs would probably not have been viewed as a panacea.

That prevalent rate discrimination could render the rate structure "unreasonable" was recognized in the Railway Act of 1903. Currie notes that one of the primary functions of the Board of Railway Commissioners established under this Act was "to deal with allegations of unjust discrimination between persons, places, and classes of freight. . ."<sup>301</sup> This jurisdictional extension did establish user interest (or "reasonableness") as an essential factor in the adjudication of requests for changes in rates, but because of its legalistic basis, the process yielded revisions in the detail rather than the fundamental substance of the Canadian railway rate structure. In effect the increased prominence accorded to the consumer-oriented standard of "reasonableness" chipped away at but did not dismantle a rate structure predicated on price discrimination and

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<sup>300</sup> *Ibid.*, p. 182.

<sup>301</sup> Currie, *op. cit.*, p. 6.

internal cross-subsidization. Thus in 1961 the Royal Commission on Transportation was to express consternation at "the railways" continued adherence to. . .this traditional rate policy featuring high rates on high-value products and low rates on low-valued products. . ."302

Besides being judged "reasonable" from the carriers' point of view and from the user's point of view, a railway rate might also be deemed "reasonable" from society's point of view where society's interest is defined in a manner which differentiates it in some way from the interest of either carrier or user. The first Part explored in considerable detail the contention that even a smoothly functioning perfectly competitive market for any service is unlikely to achieve a socially optimum allocation of resources. The implication of this contention for railway rates is that the rate for a particular service may not be "reasonable" from a social point of view even if it approximates the rate which a perfectly competitive market might charge for that service or if it is "reasonable" to both vendor and purchaser.

Although conjecturally there is ample scope for elaborating social standards of rate "reasonableness", this category of standards does not appear to have had any significant historical manifestations. Even on those

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<sup>302</sup> *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. I, p. 14.

occasions (e.g. the Crowsnest rates or the reduced Maritime rates) where an evaluation of rates based on distinctly formulated social standards of "reasonableness" might be inferred, the more convincing historical interpretation is that the applied standards represented either the interest of a particular regional group of purchasers or a compromise between the manifested interests of carriers and users. In effect then, Canadian railway regulation only had to concern itself with two (frequently conflicting) sets of standards of "reasonableness", the carrier-oriented and the user oriented.

There can be no underestimating the importance of the concept (or concepts) of "reasonableness". In oligopolistic circumstances abetted by uneven intermodal competition the concept of "reasonableness" is the essence of the regulatory philosophy of rate control. Rate control in turn represents the instrument for realizing and making choices between the rail transportation system's economic possibilities, including the vital locational possibilities. With this in mind the 1961 Royal Commission on Transportation placed its emphasis accordingly:

Where a given mode of transport has a clear-cut cost advantage (which, to be effective, is reflected in rates) over all other modes in the movement of certain commodities, and conditions occur which limit the number of firms, the central problem is the public regulation of the firms in that mode to provide "reasonable" rates. Public policy in that case has the task of

deciding, through applying standards of reasonableness, what the rates must be.<sup>303</sup>

Evidently the situation has required much more than the linking of rates to costs.

Description of the statutory clauses relating to railway line location and traffic arrangements occurs elsewhere in this paper, as does discussion of rates policy provisions. However, certain other provisions regulating rates deserve mention because they possess locational implications in ways mentioned in this chapter.

In the 1868 Railway Act the needs of the carriers appear to have been the main criterion in the regulation of rate changes and by extension, the general level of rates. Witness the following: "All or any of the tolls may. . . be reduced and again raised as often as deemed necessary for the interests of the undertaking" (Section 12 (6)).

In the 1903 Act power over rate changes and levels was vested in the discretionary authority of the regulatory commission. This Act also presented the "short and long haul" clause to which reference will be made in connection with the topic of discrimination. The 1903 version of the long and short haul clause reads: "The Board shall not approve or allow any toll which. . . is greater for a shorter than for a longer distance, the shorter being included in the longer distance, unless the Board is satisfied that,

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<sup>303</sup> *Ibid.*, Vol. II, p. 15.

owing to competition, it is expedient to allow such toll" (Section 252 (3)). Some consideration of shipper needs is evident in this provision.

Despite minor differences in wording, the 1952 version of the long and short haul clause (Section 317 (5)) was the duplicate of its 1903 predecessor. It was reinforced by a provision forbidding railway companies to allot or distribute their freight cars in such a manner as "to discriminate unjustly against any locality or industry" (Section 319 (3) (d)). Thus in the 1952 Railway Act carrier need continued to be a rate change criterion, but its operation had become less automatic and more defensive in nature: "Where an objection is filed with the Board to any freight tariff that advances a rate previously authorized to be charged under this Act, other than a competitive rate, the burden of proof justifying the proposed advance shall be upon the company filing the tariff" (Section 329 (b)). The incursions of shipper-oriented criteria into the process of rate regulation are perceptible in the construction and application of the clauses cited in this paragraph.

Mention will be made of the 1952 Act's declaration of national freight rates policy, which sought a non-discriminatory tolls structure (Section 336 (1)). Yet while making this declaration the Act contained many exceptional

and special rates provisions, most of which had locational implications. A major group of exceptions to the national freight rates policy appeared in Section 336 (4):

Subsections (1), (2), and (3) are subject to subsection (6) of Section 328 of this Act and to the *Maritime Freight Rates Act*, and do not apply in respect of

- (a) joint international rates between points in Canada and points in the United States of America;
- (b) rates on export and import tariff through Canadian ports, where in practice such rates bear a fixed and long-standing relationship with rates on similar traffic through ports in the United States of America;
- (c) competitive rates;
- (d) agreed charges authorized by the Board under Part IV of the *Transport Act*;
- (e) rates over the White Pass and Yukon route;
- (f) rates applicable to movements of freight traffic upon or over all or any of the lines of railway collectively designated as the "Eastern Lines" in the *Maritime Freight Rates Act* as amended by the *Statute Law Amendment (Newfoundland) Act*, chapter 6 of the statutes of Canada, 1949; or
- (g) where the Board considers that an exception should be made from the operation of this section.

The 1952 Railway Act perpetuated the legislatively enshrined Crowsnest rates on grain and flour (Section 329 (6)), and, as a supporting measure empowered the regulatory commission to take necessary compulsory action to ensure the prompt and complete shipment of Prairie grain

(Section 321). The 1952 Act provided that no rate from the Prairies to B.C. or Eastern Canada, or from B.C. or Eastern Canada to the Prairies could exceed any similar rate by more than 33% (Section 337). The Act also provided up to 7 million dollars annually to be used for the maintenance of trackage north of Lake Superior, the sum to be considered a subsidy for the reduction of rates on movements served by that trackage (Section 468). Finally, the Act permitted the regulatory commission to sanction "special tolls. . .to create trade" (Section 349).

The 1966-67 Railway Act repealed the short and long haul clause and the freight car distribution requirement. As mentioned elsewhere, most compensatory rates are validated simply by filing, although "captive" shippers are entitled to the benefit of maximum rate controls.

Echoing its 1952 predecessor, the 1966-67 Act perpetuates the Crowsnest grain and flour rates and adds corresponding provisions covering shipments through Vancouver, Prince Rupert and Churchill (Sections 328 (1)), 328 (2), and 328 (3)) as well as special rates subject to subsidy on grain exports through ports including and east of Montreal (Section 329). Regulatory power to ensure the prompt and complete movement of Prairie grain remains intact (Section 321).

Several other rate regulation measures with

locational implications are to be found in the 1966-67 Act. Certain provisions of 1960 and 1962 freight rates reduction legislation are extended on a subsidized basis for two years (Section 335 (1)), as are reduced coal and coke rates (Section 335 (2)) and reduced timber rates (Section 335 (3)). These three categories of rate reduction are directed to the benefit of the Maritimes. Finally, the Act grants the railway companies the right to maintain certain export rates in violation of others of the Acts' provisions, but subjects the "bridge" (i.e. Lake Superior trackage maintenance) subsidy to phased withdrawal.

This chapter has explored the role of the railway as an agent for influencing various aspects of national economic activity. Most prominent among the aspects examined was spatial distribution. The tension between railway pricing policy and the use of the railway as a locational tool was noted and analysed. Enough evidence was provided to convincingly suggest the incompatibility between tying railway rates to costs and the historical uses of Canadian railways as locational tools. This evidence therefore tends to support the hypothesis.

## CHAPTER XII

### SERVICE MAINTENANCE ASPECTS

Sometimes the goals set for public policy - and hence, by extension, for the transportation system and its regulators - have not been mutually reinforcing. For instance, the goal of preserving carrier financial health can sometimes clash with another historically significant goal; that of protecting communities or segments of society from loss or diminution of rail service. Although these two goals need not be diametrically contradictory, their potential dichotomy can require compromise. In its second volume the 1961 Royal Commission expresses some of the regulatory implications of goal conflict: "If the controls are public, the regulatory authority has the double, and often conflicting, task of attempting to limit monopoly or oligopoly price while trying to maintain revenue requirements and acceptable service standards."<sup>304</sup>

The goal of service maintenance has a double significance for railway regulation. In the first place, by sometimes requiring outright intervention, the pursuit of

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<sup>304</sup> *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. II, pp. 15-16.

service maintenance can become an explicit as well as an implicit goal of the regulatory process. And in the second place, by virtue of its potential conflict with other goals, it reveals the occasionally arbitrary, pragmatic and ambiguous nature of public policy, and thereby reinforces the contention that the goals of railway regulation cannot realistically be divorced too far from those of public policy and from those of the rail system.

Although Canadian railway policy-makers may have yearned for competitive solutions based on the application of commercial principles, the often intractable problems of service maintenance have repeatedly frustrated this hope. In case after case, the economies of railway operation - with its substantial threshold costs and considerable discontinuities in variable cost - have conspired to push the private (i.e. as to the enterprise) financial loss associated with the maintenance of a particular service beyond commercially tolerable limits of internal cross-subsidization. When faced with these cases, Canadian railway policy - whether in its regulatory manifestation or otherwise - has frequently balked at the prospect of further reductions even in demonstrably unremunerative services, especially where such reductions effectively imply total cessation of service.

The most extreme, most controversial and one of the

most common varieties of service reduction is the outright abandonment of a stretch of rail line. The economic and social dilemma attending abandonment is that, in order to be withdrawn, a service must first have been provided, and that the consequences of withdrawal are not confined to the supplier. Meyer *et al.* effectively express this dilemma in the following terms:

It was and is virtually impossible to predict with absolute precision which new transportation operations would mature into profitability after a trial period and which would not. Unfortunately, by the time it became obvious which operations would not pay, many individuals and businesses had made investments that would be economically eliminated if the transportation services were withdrawn.<sup>305</sup>

To a very considerable extent this most extreme form of service reduction, branch line abandonment, has been concentrated in the Prairie region. The advent of the railway, accompanied by increasing farm mechanization, created a revolution in the agricultural economy of Western Canada.<sup>306</sup> The extent to which this revolution was dependent on branch line proliferation is illustrated in the following passage:

Since it has been calculated that, under most circumstances, grain could not be profitably hauled more than ten miles to a railway, main or

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<sup>305</sup>Meyer, *et al.*, *op. cit.*, p. 9.

<sup>306</sup>Morton, *op. cit.*, p. 410.

branch lines were needed if the west were to have more than a narrow belt of settlement.<sup>307</sup>

This proliferation had its origins in the CPR's monopoly period and accelerated with the irruption of two more transcontinental rail projects at the turn of the century. Of this acceleration and its implications for the Prairie branch line network Glazebrook says "The west secured unlimited competition at the cost of over-building."<sup>308</sup> Even the railway crisis of the World War I era did not permanently dampen the enthusiasm for railway construction. The then deputy minister of Railways and Canals has been quoted as describing the post World War I railway boom in the following terms: "new mileage of the two chief railway systems of Canada is being added to at an average rate of more than a mile a day."<sup>309</sup> Much of this additional mileage was built into Western Canada's branch line system.

The authorities were not oblivious to the implications of the railway mileage accretions. In apparent recognition of the fact that many branch lines were redundant even under the technological and competitive conditions prevailing in 1919, an abandonment clause was written into the CNR's founding statute, *viz*:

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<sup>307</sup> Glazebrook, *op. cit.*

<sup>308</sup> *Ibid.*, p. 135.

<sup>309</sup> *Ibid.*, p. 194.

The company was empowered by the Act of 1919 to abandon operation, with the approval of the governor in council and on the recommendation of the Board of Railway Commissioners, on lines on which operation and maintenance had "become unnecessary or inexpedient through duplication, or other economical considerations. . . ." <sup>310</sup>

Nevertheless this provision does not seem to have been used to any great extent, <sup>311</sup> nor did abandonment form a significant part of the programme enacted more than a decade later as a result of the Duff Royal Commission. <sup>312</sup>

With the technological advances accompanying World War I there came market changes which aggravated the pre-existing branch line redundancy. In particular the spread of highways and the growing practicality and flexibility of motor transport enabled trucks to attract much relatively less bulky and more valuable cargo from railways. This trend only increased the severity of the financial penalties attending many branch line operations.

In spite of these pressures and the urgings of railway management in favour of abandonment relatively little was done in subsequent years to so diminish rail service. The R. B. Bennett government undertook a modest

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<sup>310</sup> *Ibid.*, p. 179.

<sup>311</sup> Morton (*op. cit.*, p. 446) states that "public insistence on railway service, competitive if possible, prevented anything like a thorough-going rationalization of the lines inherited from the Laurier Boom."

<sup>312</sup> Glazebrook, *op. cit.*, p. 210.

programme of condoning branch line abandonment,<sup>313</sup> and the Turgeon Royal Commission offered a qualified approval of the application of commercial principles (the "cash nexus" approach)<sup>314</sup> to abandonment decisions, but the advent of the 1960's still found the railways with considerable branch line mileage from which they wished to withdraw. Neither had a politically and socially satisfactory resolution been found to the underlying dilemma which opposed the railways' complaints about branch line financial drains to the claims of communities about the detrimental consequences of abandonment.<sup>315</sup>

Pressures for service maintenance or against service reduction therefore constitute an important element of the environment within which Canadian railway regulation has had to operate. The influence of this environment on legislation and public policy has been of sufficient strength to justify the interpretation of service maintenance as a regulatory purpose.

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<sup>313</sup>Morton, *op. cit.*, p. 459.

<sup>314</sup>Currie, *op. cit.*, p. 14.

<sup>315</sup>Some support for the latter side of the argument may be inferred in *Royal Commission on Transportation* (Ottawa: Queen's Printer, 1961), Vol. III, p. 87, which reads in part: "While each such withdrawal of rail services would need to be appraised on its individual merits, it may be evident that the capacity of the trucking industry to absorb the additional demands for services is limited under current conditions."

Statutory measures making direct provision for regulatory control over service maintenance have appeared only in recent years. The 1868 and 1903 Railway Acts contain no such measures. In the 1952 Act the matter's treatment is essentially confined to one clause which reads: "The company may abandon the operation of any line of railway with the approval of the Board, and no company shall abandon the operation of any line of railway without such approval," (Section 168). The conditions under which the regulatory commission ("The Board") would extend its approval to an abandonment proposal are nowhere specified.

Section 168 of the 1952 Act was transferred intact to the 1966-67 Act. In the latter Act, however, abandonment procedures and criteria are spelled out in considerable detail. Discussion of procedure occurs in another chapter, but the legislated criteria are worth noting in their entirety:

In determining whether an uneconomic branch line or any segment thereof should be abandoned, the Commission shall consider all matters that in its opinion are relevant to the public interest including, without limiting the generality of the foregoing,

- (a) that actual losses that are incurred in the operation of the branch line;
- (b) the alternative transportation facilities available or likely to be available to the area served by the branch line;
- (c) the period of time reasonably required for the purpose of adjusting any facilities, wholly or

- in part dependent on the services provided by the branch line, with the least disruption to the economy of the area served by the line;
- (d) the probable effect on other lines or other carriers of the abandonment of the operation of any segments of the branch line at different dates;
  - (e) the economic effects of the abandonment of the operation of the branch line on the communities and areas served by the branch line;
  - (f) the feasibility of maintaining the branch line or any segment thereof as an operating line by changes in the method of operation or by interconnection with other lines of the company;
  - (g) the feasibility of maintaining the branch line or any segment thereof as an operating line either jointly with or as part of the system of another railway company by the sale or lease of the line or segments thereof to another railway company or by the exchange of operating or running rights between companies or otherwise, including, where necessary, the construction of connecting lines with the lines of other companies, and
  - (h) the existing or potential resources of the area served by the branch line, seasonal restrictions on the other forms of transportation therein and the probable future transportation needs of the area. (Section 314C (3)).

This chapter has pointed out that Canadian public policy has generally been reluctant to tolerate the external diseconomies attending rail service reduction or abandonment. This posture has been maintained in the face of pleas from the carriers whose finances are allegedly

adversely affected by service maintenance. The chapter therefore supports the hypothesis by describing a prominent aim of regulation which could not be achieved by the expedient of tying rail rates to costs. No more graphic evidence of this assertion could be provided than the clause quoted in the preceding paragraph.

## CHAPTER XIII

### CARRIER FINANCIAL STABILITY ASPECTS

Canadian railway regulatory agencies have not been called upon to play a major sustained role in preserving the financial stability of the nations' rail carrier firms. In that direct sense the care of the railways' financial health cannot be construed to be a purpose of Canadian regulation. Yet the history of Canada's overall rail transportation policy yields numerous examples of official efforts to protect railways' financial strength. In the light of these examples, it would be reasonable to assume that both the Parliaments which empowered regulatory agencies and the people who staffed them would have been reluctant to contemplate any regulatory policies or actions which seriously conflicted with the public policy objective of preserving carrier financial stability. Therefore in that oblique but important (i.e. because it suggests some limits to the context of regulatory jurisdiction) sense, financial preservation must be deemed a purpose of Canadian railway regulation even if to do so is to add another touch of vagueness to the boundary between regulation and public policy. The following paragraphs will

attempt to support this contention by referring to specific cases of public intervention in the cause of railway financial stability.

First, the important subject of direct assistance to Canada's railways must be explored. The history of direct assistance is a long one, with major landmarks pre-dating Confederation. Currie notes examples of governmental provision of transportation facilities, a well embedded tradition which had its fullest expression in the area of canals.<sup>316</sup> In the matter of railways the colonial administrations proved themselves particularly ready to extend support to private builders. In Morton's view it was Sir Francis Hincks, a Minister of the Crown in the Canadas, who originated the legislation which made the state the underwriter of private railway development in Canada. His Guarantee Act of 1849 gave a government guarantee to the bonds of railways up to five per cent interest when the railway had completed half the construction proposed. The same act empowered the municipalities to use their financial resources to assist railway construction.<sup>317</sup>

Although the Intercolonial Railway was to be a publicly owned enterprise its history also provides evidence of the newly formed Dominion government's willingness to assist railway development. In the first place, even before

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<sup>316</sup>Currie, *op. cit.*, pp. 3-5.

<sup>317</sup>Morton, *op. cit.*, p. 289. This policy created a precedent which was to be followed in one form or another at the national level for many years after 1867.

Confederation, (and before the fact of public ownership of the Intercolonial), the colonial governments concerned reached provisional agreement on costs and extracted an offer of loan guarantees from the United Kingdom.<sup>318</sup> A private firm would therefore presumably have been the beneficiary of substantial assistance pursuant to these accords. In the second place the responsible officials were apparently "fully warned" of the slim chances of the line's survival without subsidies<sup>319</sup> and made the eventual decision in favour of public operation on that pragmatic basis<sup>320</sup> rather than through a categorical rejection of commercial criteria. And in the third place, the Intercolonial did actually come to require regular funding from the national government as an article of public policy. Because of these three aspects of its history the Intercolonial differed from other recipients of public assistance not so much in the fact or even the form of receipt as in the conditions attached to receipt. As Currie states in his comments on Canada's nineteenth century railway support policies:

It is particularly worthy of note that this aid was given outright. It was paid in cash or land, and, excluding the Intercolonial, the recipients

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<sup>318</sup> *Ibid.*, p. 314.

<sup>319</sup> Glazebrook, *op. cit.*, p. 10.

<sup>320</sup> *Ibid.*, p. 19.

had no further claim on the public treasury and expected to conduct their affairs solely with a view to corporate profit.<sup>321</sup>

The earliest major and greatest single recipient of public aid was, of course, the CPR. From the outset it had been a matter of cabinet policy that the new line would be built by a private firm helped by public grants both of money and of land.<sup>322</sup> Over the years this policy was to be implemented by a seemingly endless series of loans.<sup>323</sup> Even during the Liberal years following the 1873 election, when the original CPR concept seemed to be in jeopardy, the principle of subsidization remained in force. Witness the following:

Mackenzie. . . had sought to get construction of the railway started in 1874 by a private company. In the depression none came forward. He then abandoned the Conservative plan of having one company build the whole line with the aid of grants of land and money. Instead he proposed to call for tenders from contractors for four different sections of the line and to aid construction by a land grant of 20,000 acres a mile and a subsidy of \$10,000 a mile. The government might take over all or any of these sections on payment of the cost less the land grants plus ten per cent of the remainder.<sup>324</sup>

Glazebrook indicates that government construction of parts

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<sup>321</sup>Currie, *op. cit.*, p. 5.

<sup>322</sup>Morton, *op. cit.*, p. 344.

<sup>323</sup>e.g. Morton, *op. cit.*, p. 353.

<sup>324</sup>*Ibid.* Mackenzie was the Prime Minister.

of the Pacific railway continued well into the 1880's along with the private efforts of the CPR.<sup>325</sup> During the construction period many government loans to the CPR (for instance that of 1883) were secured by liens on the main line although the reluctance<sup>326</sup> of the government to foreclose gave these loans many of the characteristics of subsidy. One of the most important forms of aid was the subsidy implicit in the "monopoly clause" (Section 12) of the company's charter. Its nominal withdrawal under pressure in 1888 was accomplished only with the government's guarantee of the interest on a fifteen million dollar loan<sup>327</sup> - another latent form of subsidy. Still later the Crowsnest Agreement provided sums of money to the CPR in return for certain rate restraints, thereby signalling an exception to Currie's generalization about unconditional aid cited earlier. Government aid to the CPR was therefore significant both in quantity and variety - a significance to which regulators could hardly be oblivious.

Canada's federal government also extended substantial assistance to the initially independent, private-enterprise components of the CNR. Through purchases of seven million dollars in 1913 and thirty-three million in

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<sup>325</sup> Glazebrook, *op. cit.*, p. 85.

<sup>326</sup> An attitude discussed by Glazebrook, *op. cit.*, p. 87.

<sup>327</sup> *Ibid.*, p. 115.

1914, the government came to own 40% of the capital stock of the Canadian Northern by 1918,<sup>328</sup> a situation which, in the context of the times must be construed as indicating a public desire to provide necessary funds rather than necessarily to obtain effective control of the enterprise. As for the Grand Trunk Pacific, it was, among other things, the intended recipient of one of Ottawa's most bizarre assistance schemes. Glazebrook's comments on this scheme have already been transcribed in their entirety (the National Transcontinental rationale). Once again, these examples demonstrate the lengths to which Canada's governments have been prepared to go to provide material (cash or equivalent) support to the country's railways.

With the passage of time, the balance in the more conventional types of direct government assistance gradually shifted. Early in Canada's history land grant subsidies were very prominent. An abortive proposal was actually made to finance the building of the Pacific railway exclusively by this method. "In 1879 the government proposed to institute a commission, including representatives of the imperial government, who should hold a very large amount of land for sale, and the proceeds to pay for the construction of the railway."<sup>329</sup> Three years later Ottawa introduced a

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<sup>328</sup> *Ibid.*, p. 162.

<sup>329</sup> *Ibid.*, p. 72.

federal railway subsidy policy which went a long way to consolidating this important function in the hands of the national government and thereby relieving the provinces of this onerous responsibility.<sup>330</sup> This effective centralization was eventually to be followed by the discontinuation of land grants (after 1890), although cash subsidies and bond guarantees were retained.<sup>331</sup> It must be significant that money subsidies achieved primacy over land grants; among other things it can be considered a development symptomatic of the government's concern not only for the provision of rail facilities but also for perpetuating rail activities through protecting the financial health of the enterprises involved.

The CNR also benefitted substantially from government assistance. From its conception, that corporation faced deficits and large capital expenditure requirements. "Holding that the Canadian National not only could never pay, but that part of it would fall into complete disrepair unless it were put into better condition, the board approached the government, which proved to be ready to provide the money required."<sup>332</sup> This precedent, once set,

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<sup>330</sup> *Ibid.*, p. 92. But Morton (*op. cit.*, p. 400) mentions the 1901 agreement between the Canadian Northern and the Manitoba government - an accord somewhat parallel to the more celebrated Crowsnest Agreement.

<sup>331</sup> Morton, *op. cit.*, p. 400.

<sup>332</sup> Glazebrook, *op. cit.*, p. 178.

has been regularly followed through the years. As Glazebrook indicates in his analysis of the CNR's formation, the components' need for financial support was - at least in the eyes of the Drayton-Acworth Royal Commission - the outstanding motive for public ownership.<sup>333</sup> The financial stability of the CNR has therefore been an element of considerable importance in the fabric of national transportation policy.

As the CNR's regular financial transfusions indicate, the use of subsidies was not confined to the era of railway building and expansion. As a result of the Duncan Royal Commission of 1926 the Maritime Freight Rates Act came into force. It provided government financed rate reductions in the Maritime region. Of the relationship between the federal government and the carriers in this programme, Glazebrook draws the following general picture: "the lower rates were to be operative on all railways in the area, and. . .the loss to the companies was to be made up by the government. . .without prejudice to the CP."<sup>334</sup> This policy therefore involved subsidies and was not to be the last of its kind. Beginning in the late 1950's even more massive subsidy programmes came into play. Currie's analysis of them is illuminating not only for its direct

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<sup>333</sup> *Ibid.*, p. 119.

<sup>334</sup> *Ibid.*, p. 197.

comments, but also for the perspectives it provides:

It is true that subsidies are nothing new in Canadian railway history; however, those of 1958-66 were unusual for several reasons. Excluding deficits on the Canadian National, they were larger than in any equal period of time. Most of the amount, or \$50 million, was not tied to any particular service performed by the railways, whereas formerly subsidies (except for deficits on publicly-owned lines) had always been related to a specific project such as new construction or a reduction in certain defined rates. Of course it can be argued that the subsidies of 1958-66 prevented increases in the general level of rates and therefore were for a specific purpose. . . Inasmuch as part of the subsidies were paid to fend off a threatened railway strike, they could be said to constitute a subsidy to labour, though the government denied this was the case. . . Finally, the subsidies constituted a major departure from the principle that railways should be run as business enterprises.<sup>335</sup>

In view of this impressive weight and array of governmental support measures, it would have been unrealistic for Canadian regulatory authorities to have ignored the financial needs of the nation's railways. The first Part bore reference to Phillips' theoretical discussion of the two standards of rate regulation, namely the "revenue requirement" standard and the "consumer rationing" standard.<sup>336</sup> It is not surprising that the former has been predominant in Canadian railway regulation. Even Samuelson acknowledges its presence when he asserts that the use of the "easily calculated original cost

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<sup>335</sup>Currie, *op. cit.*, p. 18.

<sup>336</sup>Phillips, *op. cit.*, p. 385.

base. . . appears. . . to have been the implicit policy of the Board of Transport Commissioners on railway rates."<sup>337</sup>

Although some influential opinion (for example, the Angus Royal Commission<sup>338</sup>) advocated the application of the rate base - fair return concept to the CPR (although not necessarily to the CNR),<sup>339</sup> the official approach was generally more pragmatic. Nevertheless, Currie indicates that this pragmatism was disciplined by an underlying concern for railway enterprise health. Typical of this attitude is his discussion of the Board of Railway Commissioner's approach to rate control after World War I:

On account of the inflation which took place during and immediately after the war, the Board of Railway Commissioners allowed the railways to increase their tolls considerably. The Manitoba and Crowsnest Pass agreements were both abrogated, the first by the Board, the second by the government under the War Measures Act and later by amending the Railway Act.<sup>340</sup>

In fact, even during the Depression the stability of railway freight rates during this period of economic collapse is at least in part attributable to the pre-occupation with railway financial stability.<sup>341</sup>

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<sup>337</sup> Samuelson, *op. cit.*, p. 542. Currie (*op. cit.*, p. 13) notes that the concept of depreciation recommended itself to the Board during the World War II era.

<sup>338</sup> Currie, *op. cit.*, p. 15.

<sup>339</sup> *Ibid.*

<sup>340</sup> *Ibid.*, p. 7.

<sup>341</sup> *Ibid.*, p. 10.

The obvious concomitant of this emphasis on the "revenue requirement" standard is a corresponding neglect of the "consumer rationing" standard. In this connection Phillips' comment on the potential folly of "protecting competitors" is germane: "The price of such a policy is high - increased transportation costs and rates, as well as inefficiency throughout the entire transportation system."<sup>342</sup> This comment naturally raises the question of what has been the Canadian regulatory attitude toward railway efficiency. It is a question worth exploring in detail.

The further back one delves into Canadian railway history, the less pressure for carrier efficiency one finds. In the first place even the primitive railroads possessed such technological advantages over other contemporaneous forms of overland transport that even an inefficient railroad operation often represented a significant transfer service improvement both in terms of service and cost. In the second place, bearing in mind the infancy of the nation and its rail network, competition was spotty both in the intra-modal and inter-modal, (for instance, water competition was often either unavailable or seasonal) senses. And finally, so great and sustained was the public enthusiasm and support for railway construction that

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<sup>342</sup>Phillips, *op. cit.*, p. 514.

questions of efficiency seldom appear to have surfaced.

As the nineteenth century drew to a close, Canada's railway structure gradually evolved into oligopoly, a condition not really conducive to the pursuit of efficiency. The politically inspired Liberal policy of three transcontinental railways ushered in the twentieth century on a note of extravagance which is difficult to reconcile with any quest for efficiency on behalf of the national rail system as a whole. In view of the difficult question of external economies, the accusation of "over-building" is not susceptible to evaluation in any precise fashion. Nevertheless the facts remain that the programme represented duplication in at least two instances (the "bridge" over Lake Superior, and in the territory of the Intercolonial) and was characterized by the familiar tales of corruption and carelessness which accompanied almost every preceding railway construction project.

Even when one considers the origin and early years of the CNR questions of efficiency do not loom large. In appraising the germinal recommendations of the Drayton-Acworth Royal Commission it is fair to say that the pursuit of efficiency entered the picture only insofar as increased efficiency might have relieved the component railways' financial plight by contributing to cost reduction. Simply speaking, efficiency appears to have been a peripheral topic at the CNR's inception. Nor does the post World War I spate

of branch line construction in which the CNR participated suggest any great preoccupation with efficiency.

This relative disregard for efficiency also manifested itself in the official reaction to the railway cooperation proposals of the Duff Royal Commission. Although the reduction of duplication is not necessarily synonymous with the promotion of efficiency, and although the practicable standards of efficiency may have differed as between the CPR and the CNR, the repudiation of the Duff recommendations is symptomatic of the low priority assigned to rail efficiency. This attitude of indifference appears to have persisted in official circles at least until the time of the Turgeon Royal Commission.

The preceding paragraphs have demonstrated that while public policy has directed substantial sums to the financial support of Canada's railways, it has placed relatively little emphasis on rail efficiency. This policy disposition was an important factor creating the environment in which Canadian railway regulation operated. Bearing this atmosphere and legacy in mind it is reasonable to presume that the Canadian regulatory process has been much more conditioned to the pursuit of carrier financial stability as a goal than to the pursuit of carrier efficiency.

The major Railway Acts (1868, 1903, 1952, 1966-67) contain provisions affecting the financial condition of

railway companies in several ways. Some of these provisions tend to impose financial burdens on railway companies while others provide various forms of assistance.

In the burden category it must be remembered that every Railway Act has contained large numbers of clauses establishing safety standards. The observance of many of these standards has presumably caused the railway companies to bear more costs than they might otherwise have borne. It is also reasonable to conclude that the free carriage provisions in every Act have imposed extra cost burdens. The same conclusion probably applies in respect of the rate controls (especially concerning maxima) which characterize many Acts. The safety clauses are too numerous to list, while discussions of rate regulation and free carriage occur elsewhere.

In the assistance category can be grouped provisions seeking to avoid certain cost burdens, as well as measures of direct support. The ubiquitous expropriation clauses (discussed elsewhere) have cost avoidance attributes. So do many of the provisions regulating railway company borrowing. The 1868 Act prohibited railway companies from borrowing money at interest rates above 6% (Section 7 (12), 1868). The 1903 Act forbade the payment of interest rates exceeding 5% on bonds, debentures and other securities, as well as "on all sums actually paid in cash in respect of the shares" (Sections 93 and 111, 1903). In the

1952 and 1966-67 Acts the permissible rate on securities rose to 6% (Section 134 (3), 1952; Section 134 (3), 1966-67) while the share-related rate remained at 5% (Section 131 (2), 1952; Section 131 (2), 1966-67). The three more recent acts also specify the precedence of payments for the "working expenditure" of the railway over any mortgage obligations (Section 112, 1903; Section 137 (1), 1952; and Section 137 (1), 1966-67).

In addition to these general provisions, several isolated measures are worth noting. The 1952 and 1966-67 Acts contain provisions relating to the "Railway Grade Crossing Fund", which was the instrumentality for financing certain improvement projects (Section 265, 1952; Section 265, 1966-67). Earlier, the 1868 Act had sought to link rate levels and changes to corporate profitability. The applicable provision reads as follows:

The Parliament of Canada may from time to time reduce the tolls upon the railway, but not without consent of the company, or so as to produce less than fifteen per cent per annum profit on the capital actually expended in its construction; nor unless, on an examination made by the Minister of Public Works of the amount received and expended by the Company, the net income from all sources, for the year then last passed, is found to have exceeded fifteen per cent upon the capital so actually expended. (Section 12 (1)).

Historically most subsidies to Canadian railway companies have been channelled through Special Acts or parliamentary appropriations rather than through the

enduring regulatory statutes. The 1966-67 Railway Act, does, however, contain several measures providing for the direct transfer of funds from the federal treasury to certain railway companies. One important set (Sections 314A through 314G both inclusive) of measures relates to public subsidies for the maintenance of service on branch lines.

Upon receiving an application from a railway company to abandon a certain branch line the regulatory commission is obliged: to collect information on the costs and revenues associated with "the operation of the line and. . .the movement of traffic originating or terminating on the line;" to compile a report on the financial loss involved, if any; and to communicate the conclusions of the report to the public in the affected area (Sections 314A and 314B). After verifying the financial data, holding public meetings, and considering the social as well as the private costs and benefits (Section 314C (3)), the regulatory commission is empowered to "determine whether the branch line is uneconomic and is likely to continue to be uneconomic and whether the line should be abandoned" (Section 314C (1)). Since it is possible to declare a line uneconomic but nevertheless forbid its abandonment, there exists a further provision allowing the Minister of Finance to pay "an amount not exceeding the amount of the loss" to a railway company whose claim for a financial loss derived

from the operation of a branch line has been verified and recommended by the regulatory commission. Payments could also be made in respect of branch lines for which abandonment applications were prohibited (Section 314G (2)) and in respect of a portion of the losses incurred in the operation of passenger services (Sections 314I and 314J). Besides containing a schedule of sums up to whose totals residual payments would be made to supplement amounts payable under other sections (Section 469), the 1966-67 Railway Act authorized increases in certain rates previously subject to statutory restraint for the purpose of boosting railway company revenues (Section 368A).

The evidence provided in this chapter plays a forceful role in testing the hypothesis. The ways in which public policy has sought to secure carrier financial stability have been explored. Financial aid has been prominent among these efforts. Although other inferences are possible, it is nevertheless reasonable to infer in the volume and variety of aid a reluctance on the part of successive governments to embrace the simple expedient of tying rates to costs, especially in the face of low traffic volumes or excess capacity on many Canadian rail routes.

## CHAPTER XIV

### MONOPOLY-OLIGOPOLY ASPECTS

A substantial part of the first Part was devoted to discussing certain theoretical aspects of the 'problem' of monopoly and oligopoly. Although that discussion suggested the many ways in which the problem could be of public concern, it also indicated the many difficulties attending efforts at adjustment. Nevertheless in its practical manifestations the monopoly-oligopoly problem (which in the historical context is often referred to simply as "monopoly") must be counted a significant reason for Canadian railway regulation.

Because this chapter seeks to do little more than identify the ways in which the monopoly-oligopoly problem (or "monopoly") has influenced Canadian railway policy and regulation, it may conveniently be divided into two topics; the first dealing with railway industry structure and the second with the performance of that industry.

Insistence on any particular railway industry structure has seldom characterized national railway policy or its regulatory component.<sup>343</sup> In this is reflected more

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<sup>343</sup> For instance, the "anti-trust" approach has not been invoked.

than the traditional Canadian indifference to monopoly and oligopoly. Because the structural evolution of this country's railways is so largely the result of many governmental decisions the absence of significant regulatory jurisdiction over industrial structure can hardly escape being viewed as an integral facet of official policy. A brief resumé of the development of this situation is in order.

From the beginning railway transportation in Canada was considered an instrument of national policy rather than an ordinary industry. Implicit in this attitude was a disregard for industry structure which translated itself into a pragmatic acceptance of natural monopoly. In the initial case of the Intercolonial, economic risk alone was enough to preclude any but a monopolistic form for the rail link between the Maritimes and the Canadas.<sup>344</sup> In addition, the government of the day apparently held the opinion that inter-modal competition would affect (presumably in mitigating fashion) the monopoly power of the Intercolonial.<sup>345</sup>

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<sup>344</sup>Glazebrook (*op. cit.*, p. 19) indicates that the primary issue was not whether the Intercolonial would be a monopoly, but whether it would be a public or private one.

<sup>345</sup>Glazebrook (*op. cit.*, p. 19) quotes Sir John A. Macdonald as saying of proposals to associate the Intercolonial with the Grand Trunk: "We may expect great and powerful resistance from the steamboat and shipping interest. . ."

In the vast western domains accorded the CPR, inter-modal competition was a negligible factor: the CPR's monopoly was much more absolute, but it too was deliberately created in the belief that a monopolistic railway was better than no railway at all. Besides the exclusivity (i.e. natural monopoly) implied in the relationship between the vast investment and the initially small size of the Western Canadian market, Parliament legislated an explicit monopoly privilege for the new line.<sup>346</sup> This monopoly privilege, to which the remarkable financial stability of the CPR must in part be attributed,<sup>347</sup> was not simply the result of entrepreneurial astuteness.<sup>348</sup> In order to accomplish its rail transportation goals the national government was apparently willing to contemplate even more extensive a monopoly than was eventually achieved by the CPR. As evidence of this willingness it is recorded that in the early 1880's the government participated with the Grand Trunk in negotiation which, had the company not balked at the prospect of "bridging" Lake Superior, would

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<sup>346</sup>Morton (*op. cit.*, p. 362) discusses the contractual terms of the agreement between the nation and the CPR. Innis (*op. cit.*, Appendix B) presents the full text of the charter and contract.

<sup>347</sup>Morton (*op. cit.*, p. 370) comments on this characteristic - most unusual in the North American context.

<sup>348</sup>Glazebrook (*op. cit.*, p. 117) notes the association between certain CPR directors and the notorious American railway magnate, J. J. Hill.

virtually have created a national rail monopoly.<sup>349</sup>

Acceptable as railway monopoly might have been to many national politicians, it was nevertheless anathema in many parts of the country. Manitoba reacted to the prospect of a CPR monopoly by attempting to revise the structure of the railway industry in that province. "To create the competition that it wanted, the province began to charter railways itself; the Winnipeg-South-Eastern, to run to the American border; the Emerson and North-Western Railway Company, from Emerson (on the border of Minnesota) to the western edge of the province; and the Manitoba Tramway Company."<sup>350</sup>

While Morton<sup>351</sup> attributes these actions primarily to farmers' pressure, Glazebrook places the issue in somewhat broader perspective:

No matter how conscious the people of Manitoba may have been of the advantage of having a trans-continental railway, and even of the problems of operating it in a sparsely settled area, it is not surprising that they continued to protest against the cost of transportation. They believed - not altogether correctly - that the high cost was due to monopoly, and a monopoly based on an unreasonable use of federal powers.<sup>352</sup>

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<sup>349</sup> *Ibid.*, p. 73.

<sup>350</sup> *Ibid.*, p. 112.

<sup>351</sup> Morton, *op. cit.*, p. 323.

<sup>352</sup> Glazebrook, *op. cit.*, p. 113.

In response to this imperative a further group of three railways received provincial charters in 1887.<sup>353</sup> The charters granted to both groups were disallowed by the federal government.

Eventually, however, the accumulation of angry political pressure produced a material change in the terms binding the CPR to the nation. At the behest of Manitoba Premier Greenway, and ostensibly in response to the rail capacity need created by the bumper crop of 1887, the federal government "persuaded the Canadian Pacific, in return for a loan, to give up the monopoly clause."<sup>354</sup>

According to Glazebrook's interpretation, Manitoba's apparent victory was a hollow one. Witness the following:

By an Act of 1888 (51 Vict., C.32) the monopoly clause was repealed, the policy of disallowance was implicitly abandoned, and the government was empowered to guarantee the interest on a loan of \$15,000,000 to be issued by the company. . . . But the real object of the struggle was not gained by the province, for the freight rates remained much as they were, the Northern Pacific built a number of lines in Manitoba, but instead of conducting a rate war with the CPR, divided the traffic with that company.<sup>355</sup>

Although it constitutes a minor incident in Canadian railway history, the Manitoba railway charters episode does reveal the federal government's indifference to

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<sup>353</sup> *Ibid.*, p. 114.

<sup>354</sup> Morton, *op. cit.*, p. 263.

<sup>355</sup> Glazebrook, *op. cit.*, p. 115.

structural considerations. Insofar as solutions to monopoly abuse are concerned, the government appeared willing to resort to structural adjustments only under duress, and then with little effect. On the position of the CPR in Western Canada, Glazebrook therefore says, "Theoretically it gave up its monopoly in 1888, but the absence of any real competition for many years rendered that concession nugatory."<sup>356</sup>

In spite of efforts in Manitoba the closing decades of the nineteenth century witnessed a considerable consolidation of railway lines in Canada. Glazebrook characterizes the era as one of "active competition between large companies which in the course of that competition absorbed the smaller lines."<sup>357</sup> For the most part, this competition (which included rate wars) was confined to the central provinces. The growth of the CPR led to a polarization around that road and the Grand Trunk. Both these large companies acquired or merged with many smaller railways (e.g. the amalgamation of the Grand Trunk with the Great Western in 1882).<sup>358</sup> "The effect was to leave two great companies in possession of the greater part of the

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<sup>356</sup> *Ibid.*, p. 118.

<sup>357</sup> *Ibid.*, p. 91.

<sup>358</sup> *Ibid.*, p. 102. Glazebrook even mentions instances of property transactions between the two great competitors.

railway mileage in Canada. In central Canada they served roughly the same areas. . . ."359

The federal government appears to have paid little active attention to this process of amalgamation and concentration. Although in extenuation the aid and encouragement given to the Canadian Northern and the Grand Trunk Pacific may be cited, the so-called "three railway policy" (i.e. the two afore-mentioned and the CPR) of Laurier's Liberals does not seem to have been aimed primarily at creating a more competitive railway industry structure. On the other hand it has been claimed that the government's refusal to sell its 40% share of the Canadian Northern frustrated the acquisition of that line by the CPR. So it seems that while the national government was willing to acquiesce in the absorption of the small by the large (given the economics of railway operation described in the preceding chapter, the disappearance of smaller railways was probably an irresistible trend), the government would not go so far as to tolerate an absolute nation-wide rail monopoly. In any event none of the public-sector decisions in this area were delegated to regulatory agencies.

Nor can the creation of the CNR be interpreted primarily as an attempt to create a "competitive" national rail duopoly. The main imperatives behind the formation of

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359 *Ibid.*, p. 108.

this system appear to have been the maintenance of service and national credit. In Glazebrook's opinion the CNR was a creature of "necessity rather than choice."<sup>360</sup> Most of its aggressive attitude toward the CPR seems to have been derived initially from the personalities and ambitions of its board members. Paradoxically it appeared for a while that the CNR might be compelled by public policy to form a very close working alliance with the CPR. With the triple objective of cutting railway duplication, steering the CNR firmly toward the pursuit of commercial objectives, and protecting the CPR from "unfair" CNR competition, the Duff Royal Commission of 1931-32 recommended a significant degree of operational co-operation and sharing between the two concerns.<sup>361</sup> In the straitened circumstances of the period one of the considered alternatives to co-operation appears<sup>362</sup> to have been the erection of what would have amounted to a national rail monopoly under the effective direction of CPR management.<sup>363</sup> In the words of the CPR president of the time: "The Canadian Pacific in complete co-operation with the Canadian Government - for that is what

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<sup>360</sup>*Ibid.*, p. 175.

<sup>361</sup>Currie, *op. cit.*, p. 11.

<sup>362</sup>This theme of co-operation was not altogether unprecedented. The statutory references bear this out.

<sup>363</sup>Glazebrook (*op. cit.*, p. 205) indicates that the CPR was advocating an all-embracing leasing and profit-sharing arrangement.

unification means - can achieve infinitely more for the future welfare of Canada than can the two railway systems separately, within the present working limits of the statutory authority."<sup>364</sup> His aspirations and the prospect of a unitary national rail system were frustrated not only by the Royal Commission's recommendations,<sup>365</sup> but also by significant political opposition.<sup>366</sup> As events were to prove, neither of these two possibilities - a greater co-operation or some form of unification was fully realized.<sup>367</sup>

This relative dearth of structural approaches to the problem of monopoly-oligopoly in Canada's railway industry can be contrasted to the policy and regulatory attention paid to the performance of that industry. While the first

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<sup>364</sup>Glazebrook, *op. cit.*, p. 211.

<sup>365</sup>Glazebrook (*op. cit.*, p. 207) states that the Duff Report "declared for the continuation of competition, fearing the power of a monopoly of such magnitude, and distrusting the perpetual lease of one company to the other as equally resulting in monopoly."

<sup>366</sup>Glazebrook (*op. cit.*, p. 201) quotes the then Attorney-General of Manitoba as saying that "the government of Manitoba is opposed to any form of amalgamation of the railway system. It is unqualifiedly opposed to any monopoly that is not entirely controlled by the government. In the present circumstances, it does not favour a government monopoly of the railways."

<sup>367</sup>Of the Duff Commission's co-operation proposals and consequent legislation Glazebrook (*op. cit.*, p. 209) says, "such co-operation as was actually put into practice was slight indeed as compared with the intentions of the royal commission and of the act."

Part of this paper emphasized theoretical economic implications of monopoly and oligopoly in such matters as resource allocation, history shows that Canadian railway regulation has been more concerned with visible and popularly identifiable performance characteristics. For the purpose of interpreting monopoly-oligopoly abuse as a reason for Canadian railway regulation, the perception of these performance characteristics can be divided three ways: first, resentment of the fact of monopoly; second, dissatisfaction with the quantity or quality of service; third, rate controversies.

In this country, rail monopoly has not been anathema but has been suspect. Historians are quick to point out that Parliament has usually presumed to reflect a public reluctance to diminish competition except under special circumstances. In addition to this general posture two further factors strengthened and complicated the latent anti-monopoly sentiment. One was that the national importance of rail communication gave national significance even to a monopoly situation confined within a particular region. The other was that - especially in railroading's early days - the rail mode possessed such clear technical superiority over other available forms of transportation (i.e. acceptable substitutes were so scarce) that its scope for abuse was - and was perceived to be - correspondingly great.

The case of regional monopoly is best exemplified by the CPR's tenure in Western Canada.<sup>368</sup> The CPR situation was unusual in that monopoly power was explicitly enshrined in the company's parliamentary charter, being there mitigated only by an express limitation of net earnings to 10 per cent on capital.<sup>369</sup> The already cited elimination of the monopoly clause was a more nominal than real blow at the economic substance of CPR power, which undoubtedly sustained that company through an era of railroad industry financial crises, and which waxed during the Prairie boom of the late 1890's and beyond.<sup>370</sup> Other railways may have enjoyed certain degrees of local monopoly power, but none were so immune from water competition or so essentially linked to the bulk-traffic Western agricultural economy, as the CPR.<sup>371</sup> Insofar as resentment of the very existence of monopoly can be separated from protests against whatever specific abuses that monopoly entailed, this resentment may be presumed to have played a large part not only in shaping aspects of

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<sup>368</sup>The Manitoba charters episode has already been mentioned in testimony to provincial concern over CPR monopoly.

<sup>369</sup>Morton, *op. cit.*, p. 362.

<sup>370</sup>*Ibid.*, p. 400.

<sup>371</sup>Moreover, the interlocking directorate relationship (cited in Glazebrook, *op. cit.*, p. 117) could not have enhanced the CPR's reputation.

overall national transportation policy (e.g. the eventual refusal to sanction a national rail monopoly), but also in shaping the consequent regulatory landscape (e.g. the sanctity of the Crowsnest rates or, for that matter, the general extent of regulatory jurisdiction).

Influential as the spectre of monopoly may have been in forming the character of Canadian railway regulation, a much greater role must be attributed to the concrete record of real and alleged abuse. The first aspect of real and alleged abuse (and the second category of monopoly abuse of which this chapter will treat) involves certain types of arbitrary decisions about the quantity and quality<sup>372</sup> of rail service. As the first Part has demonstrated, the geographic pattern of transfer services is of great economic significance. For that reason decisions regarding the commencement, intensification, reduction or cessation of service are likely to have sufficient public impact to invite regulatory attention. In Canada, however, the responsibility in such matters has been split. Questions of service reduction or withdrawal have had enough regulatory implications to receive separate treatment elsewhere in this part (i.e. the chapter on "maintenance of service").

Matters related to service commencement or intensification

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<sup>372</sup>This paper ignores the area of safety, a more or less constant element of the quality of transportation and extensively the subject of regulation, on the grounds that it has not been a matter of significant economic controversy.

have, on the other hand, seldom had comparable regulatory consequence. Historically, this country has frequently suffered from railway overbuilding, its result being chronic excess capacity at many times in many sections of the country. Yet decisions to augment Canada's railway mileage - even where the objective may have been to combat or forestall monopoly - have usually been made by political bodies or the railroad companies themselves, rather than by regulatory authorities (despite statutory capacity).

By far the most obtrusive category of railway monopoly abuse is the third one, which comprises the area of pricing. Although for most of their history Canada's railways have lacked the conceptual tools to put into actual practice the theoretical model of monopoly price discrimination depicted in the first Part, the general tendency of their efforts has been toward its rough and approximate implementation in the cause of internal cross subsidization. Symptomatic of this tendency was the gradual evolution of an elaborate price structure which in many of its parts was demonstrably arbitrary, visibly discriminatory, and - due to suspicions about varying discrepancies between rates and costs of corresponding movements - reputedly unfair. Because it was an expression of monopoly and/or oligopoly power (regardless of whether monopoly or oligopoly

in question was "natural" by the standards discussed in the first Part) and because in many of its manifestations it was considered undesirable *per se*, railway pricing practice became a major subject of regulation in Canada.

Almost from this country's earliest days some power over rates has been assigned to the various bodies charged with the task of railway regulation. Although the single most important initial purpose of the Privy Council's railway committee (established in 1868) was to exercise continuous supervision over matters of rail safety, the committee did not move into rate control in a big way until 1886.<sup>373</sup> Glazebrook points out that "with the exception of maxima set in some of the early charters" this function for the most part, "had been left to free competition" during the eighteen year period between 1868 and 1886. That interval had, of course, witnessed the birth of the CPR western monopoly whose pricing policies had aroused the ire of Manitobans as early as 1884 (as expressed in a protest at a meeting of the Farmers' Union in Brandon) and later contributed to the Manitoba government's decision to charter railways.<sup>374</sup> During roughly the same period the previously mentioned railway concentration in Eastern Canada was occurring, and with it the development and nation-wide

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<sup>373</sup> Glazebrook, *op. cit.*, p. 93.

<sup>374</sup> *Ibid.*, p. 113.

spread of systematic, discriminatory monopoly pricing in the railway industry. It was therefore not fortuitous that the railway committee was given rate control powers at a time when railway monopoly was becoming both more apparent (i.e. in terms of numbers) and more real (i.e. in terms of the deliberate exploitation of market power).

The matter of Canadian railway rate grievances has proven to be a confusing and in many ways intractable problem. A substantial portion of this paper's first Part was devoted to explaining the complexities of railway pricing and to developing the theoretical assertion that even were it possible to identify the "true" costs of a particular movement, it still might not be desirable to charge for that movement a rate equal to its cost. The practical implication of this assertion is that the "fairness" of almost any rate can be questioned and "imaginary" grievances are confounded with "real". Add to this the extreme economic and social significance of the railways and one has the ingredients of heated controversy.

This controversiality of rates, along with certain organisational and operating weaknesses (e.g. conflicts between political and economic functions, lack of expert and permanent staff, and lack of regular contact with the various regions of the country)<sup>375</sup> eventually proved the undoing of

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<sup>375</sup> *Ibid.*, p. 116.

the railway committee of the Privy Council. Its more powerful successor was to be called the Board of Railway Commissioners. As Currie describes it:

In order to improve the machinery for controlling rates and service on railways and to deal with allegations to unjust discrimination between persons, places, and classes of freight, the government established the Board of Railway Commissioners which took office in 1904.<sup>376</sup>

The essence of the revised approach embodied in the Board of Railway Commissioners was

an alternative method of handling consideration of freight rates, a plan which was written into the Railway Act of 1903 (3 Edw. vii, C.58). There was to be a board of three (later six) commissioners appointed by the governor in council for ten years. To this board a permanent staff of experts was attached. The commission took over all the powers of the former committee, but, unlike the committee, its activities were largely in the regulation of rates, and for such purposes it was to act as an informal court of law. Appeals from its decisions lay to the governor in council, while appeals on points of law might, with the consent of the commission, be carried to the supreme court of Canada.<sup>377</sup>

As an approach to rate control this was to survive the transformation of the Board of Railway Commissioners into the Board of Transport Commissioners (1938) and was to remain substantially intact until 1967.

Continuous regulatory supervision was not the only method of railway rate control to arise in Canada. The

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<sup>376</sup>Currie, *op. cit.*, p. 6.

<sup>377</sup>Glazebrook, *op. cit.*, p. 116.

Crowsnest Agreement involves a situation in which a certain set of rates was established pursuant to an agreement between the CPR and the federal government. In effect the agreement represents a rate concession procured by indemnity, spread by competition,<sup>378</sup> and ultimately enshrined in legislation. Other important examples of the direct use of public funds to influence railway rate levels include the 1901 agreement between the Canadian Northern and the Manitoba government, and the Maritime Freight Rates Act.

In cases such as those related in the preceding paragraph the control of the regulatory authority over rates is circumscribed. From an economic vantage point these anomalies in regulatory coverage might be viewed with misgivings. But to be valid such misgivings must needs be based on the premise that the systematic regulation of all rail rates would have been produced some unique and identifiable economic benefit. For two reasons this premise has not been applicable to the Canadian experience. First, even though rates and the market conditions which produce them are economic phenomena, their regulation has as often been a result of social and political pressure as of economic pressure; controversiality, rather than understanding of economic impact, has often been the motive for regulation. Second, and by way of corollary, rate

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<sup>378</sup>Currie, *op. cit.*, p. 6.

regulation does not seem generally to have had the economic purpose of imposing any particular model or standards of economic discipline on the market for rail services; instead rate regulation has sought to mollify and reconcile the conflicting economic aspirations of producers and consumers of rail services.<sup>379</sup> In illustration of the first point Glazebrook offers the following observations:

It was not that the Canadian railways charged an exorbitant rate per mile, but that the number of miles normally to be covered was large. Whether for internal or for export trade the Canadian producer or manufacturer had ordinarily to count on heavy transportation expenses, which fell unevenly according to geographic position. The alternative means of relief in spreading the burden more equally were to develop shorter routes especially to tidewater, and to favour certain districts by adjustments of rates.<sup>380</sup>

And with respect to the second point one need only refer back to the Turgeon Royal Commission's ambivalence on the question of the function of rates. The statutory reference contained in this chapter deals extensively with the legislative foundation (and, by implication, gaps) of Canadian railway regulation.

The history of the treatment of monopoly and its attendant problems reveals the interwoven nature of rail regulation and rail transportation policy, a factor

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<sup>379</sup>This is perhaps understandable in view of the quasi-judicial nature of the Canadian approach to railway regulation.

<sup>380</sup>Glazebrook, *op. cit.*, p. 182.

militating against any simple or abstractly based focus for regulation. The use of regulation (in the strict sense of the continuous exercise of authority by an appointed body) to influence structural characteristics has been negligible. Structural policy has generally been formulated and implemented on a sporadic, *ad hoc* basis at the political level. Efforts to influence performance have involved the use of regulation both in the strict sense and in the looser sense of including statutory and negotiated as well as administrative restraints. The very fact that a number of interchangeable methods have been directed at controlling such variables as rates indicates the haziness of the boundary between "regulation" and "transportation policy". In the significant and sensitive matter of rail monopoly, policy objectives have transcended method and therefore the applicable concept of "regulation" must be sufficiently wide to embrace consideration of methods which might be used to supplement or supplant regulation in its strict sense.

Four landmark railway acts (1868, 1903, 1952 and 1966-67) contain provisions relating to industry structure and performance. Each of these provisions could be construed to have some bearing on the public exploitation, control and/or prevention of monopolistic situations and/or activities. To better enforce many of these provisions, our regulatory commissions have been endowed with "Court of

Record" (Section 8 (1), 1903; and Section 9 (2), 1952) or "superior court" (Section 33 (3), 1966-67) status. The 1868 Railway Act, which delegated regulatory authority to a Privy Council committee, gave parliament the power to dissolve railway companies (Section 22 (9), 1868).

In Canada it has been the practice to charter national railways by Special Acts of Parliament. Subsequent changes in ownership have been subject to Railway Act regulation. The three more recent acts have prohibited railway companies and their officers from directly or indirectly owning the shares or other securities of any other railway companies (Section 290, 1903; Section 149, 1952; and Section 149, 1966-67). These same three acts (Section 282, 1903; Section 153 (2), 1952; and Section 153 (2), 1966-67) allowed railway company amalgamation to proceed only with cabinet sanction on regulatory commission recommendation. In fact any effective transfer of railway company ownership has come to require both ministerial (interim) and parliamentary (final) approval (Section 240, 1903, Section 152 (3), 1952; and Section 152 (3), 1966-67).

Because of the spatial nature of transportation activity, physical contiguity can be a major factor in the creation or exercise of monopoly power. Successive railway acts have provided measures to regulate the geographic arrangements and contacts of carriers. Statutory regulatory powers concerning main and branch line location

have already been mentioned in detail in connection with the chapter on military, political and social factors. All of the railway acts have allowed the tracks of one railway company to cross, intersect, join or unite with those of any other company (Section 7 (15), 1868; Section 177 (1), 1903; Section 164 (1) (e), 1952; and Section 164 (1) (e), 1952; and Section 164 (1) (e), 1966-67). The natural corollary of this permission was a series of corresponding powers to interchange and pool traffic with regulatory commission approval (Section 48 (1), 1868; Section 252 (4), 1903; Section 318, 1952; the applicable clause was repealed in 1966-67). The extent of permissible inter-firm co-operative arrangements surpasses traffic matters. Since 1903 railway companies have been empowered to enter into long-term (up to twenty-one years) contractual agreements embracing such areas as mutual traffic allocation, toll apportionment, running rights and the operation of joint management committees; the exercise of any of these powers has required cabinet sanction pursuant to regulatory commission recommendations (Section 284, 1903; Section 156 (2), 1952; and Section 156 (2), 1966-67). Finally, besides responding to the initiatives of railway companies in matters of spatial arrangement, regulatory authorities have been empowered to direct certain locational decisions. In the two more recent acts (Section 196, 1952; Section 196, 1966-67) the

regulatory commission had been given the right to order the joint occupation or use of land or facilities by two or more carriers in those cases where undesirable duplication is feared. A parallel power to order the connection in the public interest of adjacent lines of railway owned by different companies has been provided (Section 256, 1952; Section 256, 1966-67).

The obligation to accommodate and carry traffic upon payment for the applicable toll has been mandatory for Canada's railway companies (Section 20 (3), 1868; Sections 315 (1) and 315 (3), 1952; and Section 315 (1) and 315 (3), 1966-67). These provisions reinforce the enactments respecting tolls whose discussion follows.

Because of their extent and because of the many changes they have undergone over the years, the tolls provisions must be considered on a chronological rather than a parallel basis. Each successive act appears to provide more complex measures respecting tolls.

The 1868 tolls provisions were brief and simple. The fixing and levying of tolls was a function assigned to railway company management (Section 12 (1)) but no toll could be fixed or levied without cabinet approval (Section 12 (9)). Any toll could be altered at any time, either by the Carrier (Section 12 (6)) or by the cabinet (Section 12 (10)); but the existence of a clause forbidding

discrimination (of which more will be said later) suggests that the relationships between rates were of greater regulatory significance than the economic basis (whether 'cost' or other) of rate formulation.

By 1903 the tolls provisions had become more elaborate. Although rate setting remained a company prerogative subject to regulatory approval (Section 251 (3)), it was now tied to a more systematic framework. The regulatory commission was given the right to "prescribe or authorize" a rates classification and "endeavour" to make it "uniform throughout Canada, as far as may be, having due regard to all proper interests" (Section 255 (1)). This classification was to embrace three main classes of freight tariffs; the "standard", which represented maximum rates; the "Special", which comprehended reduced or commodity rates; and the "Competitive" which was exempt from the long and short haul portion of the discrimination clause (Section 259). Aside from the discrimination provisions (of which more will be said later), several other clauses dealt with the permissible criteria of rate making and alteration. Section 252 (2) permitted decreases in rates "proportionate" to increases in the volume or distance of carriage. Although this provision presumably signifies recognition of certain railway cost characteristics, there is no requirement binding the original rate, the reduced rate or the rate

reduction to cost factors in any specified manner. The regulatory commission was also empowered to prescribe special rate treatment for some commodities (Sections 255 (2) and 255 (3)) and to excuse discrimination directed at "securing" traffic "in the interests of the public" (Section 254 (2)). Finally, there existed an omnibus clause which permitted the regulatory commission to "disallow any tariff or any portion thereof which it considers to be unjust or unreasonable or contrary to any of the provisions of the Act, and. . .require the company. . .to substitute a tariff satisfactory to. . ." it (Section 257 (1)). The Act nowhere indicates that failure to correspond (to whatever extent) to cost automatically renders a rate "unjust" or "unreasonable".

In the 1952 Act the rate regulation measures reached a somewhat greater level of complexity. While maintaining the right of the companies to set rates, the Act (Section 336 (1)) provided an explicit declaration of the rating policy to which these rates should conform: "It is hereby declared to be the national freight rates policy that. . . every railway company shall, so far as is reasonably possible, in respect to all freight traffic of the same description, and carried on or upon the like kind of cars, or conveyances, passing over all lines or routes of the company in Canada, charge tolls to all persons at the same

rate. . ." This is essentially an affirmative version of the traditional clauses forbidding discrimination; it stresses the relationship among rates rather than the relationship between rates and costs, although it does not preclude consideration of the latter. In the pursuit of this policy and the other objectives of the Act, no tolls were valid unless approved by the regulatory commission (Section 326 (5)).

The 1952 Act retained the freight rates classification system (Section 331), but added to it a fourth class of "special arrangements" tariffs, which comprehended switching charges, etc. A classification of the criteria governing the "competitive" class accompanied the elaboration of the system. Before allowing the imposition of a "competitive" rate, the regulatory commission had the right but not the obligation to require proof: that "competition" existed; that the rate to be charged was "compensatory"; and that the rate to be charged was not "lower than necessary to meet the competition" (Section 334). Although there is no economic (i.e. in terms of cost) definition of "compensatory", the measure apparently was intended to provide qualified and partial minimum rate regulation; qualified because of its optional imposition and imprecise definition, and partial because it applied only to "competitive" situations.

In addition to the anti-discrimination portions (of

which more will be said later) the 1952 act deals with the principles of rate setting and changing in several ways. As did some of its predecessors, the Act provided that "tolls for carload quantities or longer distances may be proportionately less" (Section 317 (3)) but did not offer an economic definition of "proportionately". The regulatory commission was empowered to sanction "special rates for specific shipments" where desirable benefits might accrue to the carrier or to commerce generally (Section 349), and to "consider" traffic-generation or developmental rates (Section 323).

Finally, the 1952 Act also contained an omnibus clause permitting the regulatory commission ("the Board") to disallow and order substitution of unjust or unreasonable rates (Section 328 (1)), and confirming ". . .the powers given to the Board under this Act to fix, determine and enforce just and reasonable rates, and to change and alter rates as changing conditions or costs of transportation may from time to time require. . ." (Section 328 (5)). This provision is noteworthy for identifying cost as a major determinant and justification of rate changes, if not for specifying any particular relationship between rates and costs.

The 1966-67 Act brought further changes to the rates regulation provisions. A substantially similar freight

rates classification system remained in effect, but with two significant exceptions (Section 331). First, the unilateral right of the railway company to set rates was expanded and entrenched under provisions which made tolls enforceable simply by virtue of filing (Sections 325 (1), 326 and 333 (4)). Second, the regulatory commission was deprived of the prerogative of determining the points between which the competitive portion of the classification would apply, this function presumably being left to market forces (Section 331).

The amendments by which the Railway Act was reformed and consolidated in 1966-67 were the products of the *National Transportation Act* (Bill C-231, First Session, Twenty-Seventh Parliament, 14-15 Elizabeth II, 1966-67). The preamble to this latter act reads as follows:

It is hereby declared that an economic, efficient and adequate transportation system making the best use of all available modes of transportation at the lowest total cost is essential to protect the interests of the users of transportation and to maintain the economic well-being and growth of Canada, and that these objectives are most likely to be achieved when all modes of transport are able to compete under conditions ensuring that having due regard to national policy and to legal and constitutional requirements:

- a. regulation of all modes of transport will not be of such a nature as to restrict the ability of any mode of transport to compete freely with any other modes of transport;
- b. each mode of transport, so far as practicable, bears a fair proportion of the real costs of

the resources, facilities and services provided that mode of transport at public expense;

- c. 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; and
- d. each mode of transport so far as practicable carries traffic to or from any point in Canada under tolls and conditions that do not constitute
  - (i) an unfair disadvantage in respect of any such traffic beyond that disadvantage inherent in the location or volume of the traffic, the scale of operation connected therewith or the type of traffic or service involved, or
  - (ii) an undue obstacle to the interchange of commodities between points in Canada or unreasonable discouragement to the development of primary or secondary industries or to the movement of commodities through Canadian ports.

and this Act is enacted in accordance with and for the attainment of so much of these objectives as fall within the purview of subject matters under the jurisdiction of Parliament relating to transportation (Section L).

Several aspects of this clause require further comment. First, it may be significant that neither the clause itself nor a variant of it is incorporated in the 1966-67 Railway Act in the manner of Section 336 (1) of the 1952 Act. Second, this preamble's declarations on the subject of cost are hedged in many ways (e.g. "having due regard to national policy and to legal and constitutional requirements," "so far as practicable", "unfair

disadvantage. . .beyond that disadvantage inherent in the location or volume of the traffic", "undue obstacle to the interchange of commodities" and "unreasonable discouragement to the development of primary or secondary industries or to export trade"). These extensive qualifications could be construed to be an assertion of the impracticability and undesirability of tying the general level of rates, let alone each individual rate, to cost, even assuming cost to be entirely and exactly ascertainable. Third, the expression of the preamble's contents in the 1966-67 Act occurs primarily in the areas of minimum and maximum rate regulation and in the relaxation of certain other regulatory provisions. These latter developments will be discussed in subsequent paragraphs.

The 1966-67 Railway Act's minimum rate provisions are very broad in their application. Section 334 requires "all freight rates" to be "compensatory", a rate being "compensatory when it exceeds the variable cost of the movement." The regulatory commission has the exclusive right to judge whether a rate is compensatory (Section 334 (3)) and to disallow a rate which is not compensatory (Section 334 (4)).

The 1966-67 Railway Act also contains maximum rate regulation provisions of more limited applicability.

Section 336 (1) obliges the regulatory commission to

"inform" any applying shipper of goods who finds himself without "alternative, effective and competitive service by a common carrier other than a rail carrier" of the "probable range within which a fixed rate for the carriage of the goods would fall." Upon receipt of this information the shipper becomes entitled to ask the regulatory commission to "fix a rate equal to the variable cost of the carriage of the goods and an amount equal to one hundred and fifty per cent of the variable cost" (Section 336 (2)), the variable cost being computed "on the basis of the costs of the lowest rail route" (Section 336 (3)(d)). Shippers choosing this method of rate determination are thence bound to a one year contract with the carrier (Section 336 (5)).

By themselves the minimum and maximum rate regulation provisions of the 1966-67 Railway Act hardly amount to a comprehensive regulatory system capable of relating rates to costs for all rail movements. Yet some further indication of the legislative desire to somehow align rates and costs with the assistance of market forces may be inferred in the many reductions in regulatory jurisdiction. Through the repeal of Section 349, the regulatory commission lost the right to sanction "special rates for specific shipments", and the repeal of Section 323 entailed a parallel loss of control over traffic generation and developmental rates. The repeal of Section 317 meant

the end of the regulatory commission's ability to control rates between certain geographic points and the repeal of Section 318 eliminated the previous provisions respecting the pooling of "freights or tolls." Nevertheless the regulatory commission retained the power to "suspend", "postpone", "disallow", or "substitute" rates (Section 381 (4)) which offended against the substantially (i.e. with the exception of the "long and short haul" clause) intact discrimination clause.

The prohibition of discrimination is a theme which links the major pieces of Canadian railway regulatory legislation. Examination of the anti-discrimination provisions of four Railway Acts suggests that legal and political concepts of discrimination have been more prominent than economic (i.e. cost-oriented) concepts. With variations in strictness the statutory definition of discrimination has remained remarkably the same over the years, while the extent of its applicability has been subject to somewhat greater change.

In 1868 the discrimination portion of the Railway Act was confined to rating practices. The relevant clause reads in part: "the same tolls shall be payable at the same time and under the same circumstances upon all goods and by all persons, so that no undue advantage, privilege or monopoly may be afforded. . . ." (Section 12 (6)).

A slightly more elaborate version appears in the 1903 Act: "tolls shall always, under substantially similar circumstances and conditions be charged equally to all persons, and at the same rate whether by weight, mileage or otherwise, in respect of all traffic of the same description and carried in or upon a like kind of cars, passing over the same portion of the line of railway; and no reduction or advance in any such tolls shall be made, either directly or indirectly, in favour or against any particular person or company. . ." (Section 252 (1)). The other applications of and exceptions to this principle are worth noting. It was illegal to charge a toll "which unjustly discriminates between different localities" although the regulatory commission could, in accordance with the rate classification system and in respect of movements between points affected by competition (no distinction between intra-modal and inter-modal competition appears in the Act in this matter), sanction exceptions to this prohibition (Section 252 (3)). The regulatory commission was also entitled to excuse discrimination directed at "securing" traffic "in the interests of the public" (Section 252 (2)), and it was empowered to ensure that "no unreasonable preference or advantage. . .or unreasonable prejudice or disadvantage "was occasioned by contractual arrangements between carriers (Section 253).

The wording of the 1952 Railway Act discrimination clause is familiar: "All tolls shall always under substantially similar circumstances and conditions, in respect of all traffic of the same description, and carried in or upon the like kind of cars, or conveyances, passing over the same line or route, be charged equally to all persons and at the same rate whether by weight, mileage or otherwise" (Section 317 (1)). As in the 1903 Act, discriminatory tactics such as rebates were prohibited (Section 317 (2)), along with "unjust" rate discrimination "between different localities" (Section 317 (4)). Echoing its predecessor, the 1952 Act had provisions enabling the regulatory commission to over-ride the "long and short haul" clause by designating those points between which competitive tariffs would apply (Sections 317 (5), 317 (6), 331 and 334). The Act also forbade "unreasonable preference or advantage. . .or unreasonable prejudice or disadvantage" in the provision of facilities to accommodate traffic (Section 319).

The 1966-67 Railway Act obliges every railway company to "afford all due and reasonable facilities" for traffic (Section 319 (4)). In this and other important respects the discrimination provisions in the 1966-67 Act are similar to those in its predecessors. In spite of the disappearance of the long and short haul clause and

attendant regulatory powers (through repeal of portions of Sections 317 and 331) witness the following: "All tolls shall be just and reasonable and shall always under substantially similar circumstances and conditions with respect to all traffic of the same description carried over the same route, be charged equally to all persons at the same rate" (Section 38 (1)). In amplification of this principle, the Act explicitly prohibits "unjust discrimination", "undue or unreasonable preference or advantage" and "undue or unreasonable prejudice or disadvantage" (Section 38 (2)), and in support of these prohibitions, the Act provides regulatory commission power to "suspend" "postpone" "disallow" or "substitute" offending tolls (Section 381 (4)).

This chapter has outlined some of the points of contact between Canadian railway regulation and oligopoly-monopoly problems. Its contribution to the testing of the hypothesis lies in its supported argument that the failure to charge rates based on costs was not the unique indictment directed at Canadian railway structure or performance. The chapter strongly suggests that a move to tie rates to costs would not by itself have been publicly construed as an adequate discharge of the need to regulate rail monopoly. In this sense the chapter tends to support the hypothesis.

## CONCLUSIONS

The preceding two Parts have sought to explore and test the hypothesis that "neither economic theory nor the evidence provided by Canadian regulatory experience can be said to justify a scheme of railway regulation whose primary aim is to create or perpetuate a system of rates based on cost." Notwithstanding that a strict interpretation of the hypothesis might require the identification of only one theoretical and one historical drawback to cost-based rate regulation, this paper has provided a wide variety of theoretical and historical evidence in the endeavour to support the hypothesis from many directions. This variety performs a triple function. First, by sheer cumulative weight it strengthens the argument contained in the hypothesis. Second, by emphasizing the complexity and ambiguity of the regulation question, the variety of evidence casts further doubt on the blanket proposition that the simple tying of rates to costs (in whatever fashion) can provide the answer. Third, this variety offers a range of insight into the Canadian railway regulatory process. In one sense this aspect could be deemed a mere by-product, but in the sense that the hypothesis represents a vantage point from

which to evaluate the regulation, that insight can be of great value in itself.

Because of the degree of independence conferred by this paper's dual approach, the various chapters support and reinforce each other rather than depend on each other. For that reason the conclusions do not have to be as elaborate as they would have had to be if this paper had been devoted to the erection of a unitary argument. Nevertheless it is advisable to review the essential findings of both Parts as they relate to the hypothesis.

The first Part endeavoured to help verify the hypothesis in two principal ways. First, it portrayed the importance of transportation rates as the active agent in location theory. In this capacity it depicted the linkage between rates and the geographic distribution of economic activity, a linkage of great sensitivity and importance in any nation, but one in which transportation costs need not play a determining role. Second, it demonstrated the inability of cost to act as a reliable guide for the selection of optimum rates in allocational or efficiency terms. In doing so it dealt with: the practical difficulties attending cost calculations; the failure of the models yielding cost-based prescriptions to conform to conditions in the 'real world' and the theoretical consequences of that failure; and the narrow and perhaps

socially defective approach to cost associated with these models even under the idealized circumstances envisioned by their creators. In looking at location theory and at a selection of cost- and policy-related theory, the first Part therefore concluded that cost, in spite of its value in the commercial decision-making process, was often neither a necessary nor a desirable basis of price formation. By virtue of its applicability to railway rates this conclusion contributed substantially to the verification of the hypothesis.

A similar function was performed by the second Part. Each of its five chapters dealt with a major category of historical forces involved in shaping Canadian railway regulation and the environment within which it has developed. To have demonstrated that the forces comprising any single category - the important social, military and political category, for instance - had at any time accompanied (or even supplanted) the cost basing of rates as a primary goal of railway regulation would constitute strong justification for the hypothesis. To a greater or lesser extent such justification has been presented with respect to all five categories. Certain elements of the presentation are admittedly discursive, but the mitigating aspect of these minor digressions is their role in filling out a more comprehensive picture of Canadian railway regulatory history.

Taken in the proper spirit they do not detract from the ability of any of the second Part's five chapters to contribute to the testing of the hypothesis, and therefore they do not obscure or compromise the cumulative support lent to the latter half of the hypothesis by the arguments presented in the second Part.

Readers are referred to each of the chapters of this thesis for the arguments contained therein. Collectively these arguments offer convincing evidence that the hypothesis is an accurate representation of railway regulation in Canada. From the theoretical and historical perspectives offered it is reasonably clear that the primary aim of Canadian railway regulation has not been, nor should it have been, simply to tie rates to costs.

APPENDIX "A"

FOURTH ANNUAL REVIEW.....1967

Table 4-4 FACTORS CONTRIBUTING TO GROWTH OF REAL OUTPUT PER PERSON EMPLOYED

(Average annual percentage change)

	1955-62	1965-70	1970-75
Factor Input per person employed . . . . .	.4	.3	.7
Labour . . . . .	0.0	0.0	.3
Hours . . . . .	- .2	- .2	- .2
Age-sex composition . . . . .	- .1	- .1	0.0
Education . . . . .	.3	.4	.6
Capital . . . . .	.5	.2	.4
Fixed business investment . . . . .	.4	.2	.3
Other inputs . . . . .	.1	0.0	.1
Residual . . . . .	1.0	1.1	1.1
Total Net National Income per person employed . . . . .	1.4	1.4	1.8
Adjustment to Gross National Product per person employed . . . . .	.2	.2	.2
Gross National Product per person employed . . . . .	1.5	1.6	2.0

There are many elements affecting this residual.

These include all those factors which have a bearing on the

efficient use of labour and capital inputs - shifts of resources from lower to higher productivity uses; advancing industrial technology and knowledge; increased scale and specialization in production; changes in the mobility and adaptability of labour and other productive resources under changing economic conditions; changes in attitudes efforts and enterprise of both managements and labour; and a whole host of other factors, including environmental and institutional factors, affecting many different facets of economic activity.

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