

THE UNIVERSITY OF MANITOBA

Economic Efficiency and National Transportation Policy:
A Study of the Turgeon and MacPherson Royal Commissions

by

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Abstract

Some very significant developments have occurred in the national transportation system in Canada in recent years, but particularly since the end of the Second World War. These developments reflect the increasing complexity and maturity of the Canadian economy, and they pose very difficult questions for public policy in transportation. Historically, transportation has played an important role in achieving national economic and political goals. While transportation will continue to perform essential services for Canada's economic development, the transportation industry itself has developed to the point where the traditional policies which shaped the development of the national transportation system for the first 100 years are no longer appropriate, and cannot by themselves assure the development of a national transportation system which is fully adequate to meet the nation's transportation requirements now and in the future.

The development of the transportation industry as a sophisticated economic enterprise does not mean that transportation can no longer serve as an instrument to achieve national goals. But it does mean that greater attention must be paid to studying the implications in the industry itself of a policy which seeks to utilize transportation to achieve national objectives.

This thesis examines how and to what extent national transportation policy has dealt with these problems as they have developed especially since the end of the Second World War. Particular attention is paid to the objective of economic efficiency in the national transportation system. Two government sponsored documents are chosen as representative

statements which outline the thinking behind national transportation policy at two different times since World War II. These documents are the Turgeon and the MacPherson Royal Commission Reports, and they are examined in detail to determine what significance is given to the objective of economic efficiency, how economic efficiency is conceived, and how it can be achieved.

The thesis concludes with a brief study of the implications of the conclusions drawn from the study of the two Royal Commissions for current national transportation policy.

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Introduction

Transportation has always played a very important role in the economic and political development of Canada. The development of transportation services has never been based simply on commercial principles. Public assistance in a variety of forms has been provided to ensure the development of a national transportation system which could accomplish a number of national objectives. Historically, the most important objectives have been to promote national unity, to achieve regional economic development, to facilitate resource exploration, to promote Canada's international trade, and to support national defence. Similarly regulation has been used by public authorities to control the nature of services provided by the national transportation system in order to realize particular objectives.

Today, 104 years after Confederation, the national transportation system continues to play an important role in the achievement of national objectives. This is perhaps inevitable in a country such as Canada which is characterized by vast distances, a relatively sparse population, and an abundant supply of natural resources. Transportation is no longer as important as an instrument to promote national unity and to support the national defence, but it continues to play a significant role in efforts to achieve a more balanced regional economic development, to exploit untapped natural resources, and to promote Canada's international trade. For these purposes public intervention in the form of regulation and public assistance remains a very important part of national

transportation policy.

It is important to recognize however that major changes have occurred in the national transportation system in the past 100 years. The national economy has developed and matured during this time to the point where it is today one of the most advanced in the world. The national transportation system has developed as well and it is today a far more complex and sophisticated system than in the formative stages of this country's development. New modes of transport have been developed, and they now compete for new as well as traditional kinds of traffic with the railway, the mode which was largely responsible for the early development of the country. These newer forms of transport, the aircraft, pipeline and highway truck-trailer, also compete with each other.

National transportation policy has had to change in order to deal with the implications of these developments. First of all, policies which traditionally were designed to use transportation to achieve national objectives must be assessed in the light of alternative means available to public authorities to achieve those same objectives. For example, regional economic development may be helped by public intervention in the transport sector, or it may be achieved by using fiscal and monetary policy, or by developing a wide range of programs not related to transport such as those developed in the Federal Department of Regional Economic Expansion. Secondly, the development of the transportation industry itself demands that increased attention be given to the question of how well the industry is functioning as an economic entity. The emergence of complex market structures involving very often several different modes and many individual carriers

means that policies designed to achieve particular national objectives must be assessed for their potential effects in the transportation industry. For example, a subsidy given to one carrier to provide a particular service may hamper the development of other carriers in the same market. At the very least, the benefits from the subsidy must be weighed against the potential costs associated with the distortions which may develop in the transport industry.

It is certain that the relationships between the economy as a whole, the transportation sector, and national policy objectives will become more complex in the future, and will require a greater degree of precision in policy formulation and implementation.

It is with these considerations in mind that this study is undertaken. The purpose of this study is to examine certain changes which have occurred in national transportation policy since the Second World War in particular, which reflect a growing awareness of the underlying developments taking place in the national economy and the transportation sector. The study will concentrate on one change in particular, the recent emphasis on the need to achieve economic efficiency in the national transportation system.

Of course, there may be many other objectives for the national transportation system in addition to economic efficiency. Adequacy of service, profitability for the carriers, equity in the freight rate structure, and equal service for the large and small shipper, are often cited as objectives. Economic efficiency has been chosen for several reasons. First, it is one of the most challenging and complex issues in transportation policy today. Second, the author is particularly interested in this aspect of public policy. Finally,

the achievement of economic efficiency is very important because it is certainly in the national interest that Canada possess a national transportation system which is capable of satisfying the national requirements with a minimum commitment of economic resources.

It is interesting to note that the National Transportation Act of 1967 refers specifically to the importance of economic efficiency as an objective for transportation policy:

"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."¹

Economic efficiency has not always been an explicit objective of national transportation policy. Since World War II, two Royal Commissions have been appointed to study certain aspects of national transportation policy. Although neither was directed to propose specific policies for the achievement of economic efficiency, the MacPherson Commission (appointed in May 1959) suggested that economic efficiency should become the sole objective of national transportation policy. The Turgeon Commission (appointed in December 1948) did not consider economic efficiency to be of particular importance for national transportation policy.

Chapter 1 introduces the subject of economic efficiency and transportation policy. It provides the conceptual and theoretical material for the subsequent examination of the two Royal Commissions.

1. National Transportation Act (Queen's Printer, Ottawa, 1967).
Section 3.

In Chapter 2 an assessment is made of how the Turgeon Commission defines economic efficiency, what priority it gives to economic efficiency as an objective of policy, and how it believes economic efficiency will be achieved. The Turgeon Report is examined because it represents a fairly recent major effort by government to examine national transportation policy. Furthermore, the Report provides a useful and important basis for comparison with the MacPherson Report. The shift in emphasis in the MacPherson Report toward concern for the transport industry itself is more apparent and is better understood when the reader is familiar with the content of the Turgeon Report. Finally, it is important to make an assessment of what importance economic efficiency had as an objective of national transportation policy as recently as 1950 when Canada was very much an industrialized country.

Chapter 3 contains a similar assessment of the MacPherson Commission Report. It is fair to say that the MacPherson Royal Commission represents the first major government sponsored study of national transportation policy which explores the implications for national policy of the changes which were occurring in the transportation sector, and in the relationships between transport and the economy as a whole. The Commission's Report is therefore a most important document for understanding present transportation policy. Indeed, the National Transportation Act of 1967 is based in some important respects upon its findings and recommendations. For these reasons, the author selected the Report for his study of economic efficiency.

Chapter 4 presents the conclusions of the study. This includes a study of the implications for national transportation policy of what is said in the two Reports about economic efficiency.

Chapter 1

Transportation, Public Policy and Economic Efficiency

This chapter introduces the subject of economic efficiency, explores its meaning in transportation economics, and examines the problems it poses for public policy in transportation.

The discussion is divided into three sections. The first will briefly examine the concept of economic efficiency and its significance for public policy.

The second section will describe the transportation system and explore some aspects of economic efficiency in transportation economics. Particular attention is paid to carrier and industry efficiency. To accomplish this task, traditional industrial organization theory is examined to refine the meaning of economic efficiency. This theory is then applied to the individual transportation industries to evaluate the potential of each for efficiency in view of its particular cost and service characteristics.

The third section will consider how economic efficiency can be achieved in transportation. This discussion should logically follow section two because it explores the dynamic interaction between the carriers and the economic environment in which they operate. An assessment is then possible of the perplexing problems which public policy must solve in pursuing the objective of economic efficiency. Five aspects of the transportation system and transport policy will be emphasized. These are competition, regulation, subsidy, coordination, and private and public ownership of transport facilities. The term "public intervention" will be used in this study to refer to the

different kinds of public activity in the transportation industry, including regulation, subsidization, policies to improve the coordination of decision-making and the integration of the modes of transport, and public ownership. The term "intervention" therefore includes the notion of "participation".

I Economic Efficiency and Public Policy

The concept of economic efficiency is complex and defies simple description or definition. In the most general terms it defines a particular relationship between specified objectives, be they economic, social or political, and the economic resources used to achieve those objectives. It may therefore be categorized as an input-output concept.

Economic efficiency is a dynamic concept, and it expresses a qualitative as well as a quantitative relationship. It is a dynamic concept because it must be defined in terms of the mutual interaction over periods of time of a number of economic and non-economic variables. It expresses in part a quantitative relationship because it is possible and desirable to measure the amount of economic resources which are used to achieve the named objectives at any given time. But the dynamic conditions which reflect the desire for economic growth make an assessment of the qualitative dimensions of economic efficiency equally important. This refers not to a measure of the total resources but rather to an analysis of, and accounting for, the composition and structure of the resources comprising that total, the relevance and implications for the stated objectives, and the effects on the resources or the objectives which changes in either would have. These dynamic conditions are particularly significant in the formulation of public

policy.

The achievement of economic efficiency is therefore much more than the realization of a least-cost solution, because "least-cost" is a static concept which only measures the result of a complex process without either explaining the process or the result. It is therefore of little value by itself to persons responsible for public policy. Similarly, economic efficiency must be distinguished from profitability or indeed any other quantitative measure of economic activity. Such measures may indicate the existence of economic efficiency, but they do not represent economic efficiency.

Economic efficiency is not necessarily compatible with any combination of policy objectives. It might appear at first glance that regardless of the specific objectives to be attained, the policy maker would want to achieve them with an efficient use of economic resources. This may not be possible for at least two reasons. First, the objectives may be incompatible with one another, and this may create difficulties for the design of efficient solutions. Second, and far more important, the economic resources which are available and the manner in which they are organized (this will depend upon the state of technology, imperfections in the market, cost structure, economic and operational features of industrial organization) may prevent the realization of some objectives unless economic efficiency is compromised. Under these conditions, economic efficiency itself becomes a separate objective of policy. An evaluation of policy must include not only an assessment of how efficiency is conceived, but what priority efficiency assumes.

It is important to distinguish economic efficiency from other kinds of efficiency. All types of efficiency are similar to the extent that they express a condition of the contribution or relationship of one set of factors to the realization of

another. Engineering efficiency may for example refer to the ability of an engine to produce a certain horsepower with a specified quantity of fuel. Administrative efficiency refers to how well the processing of a given quantity of certain types of information at a particular cost is achieved. Managerial efficiency is a measure of how various resources are mobilized and organized to accomplish certain objectives. It should be noted that these types of efficiency may contribute to economic efficiency.

II Economic Efficiency and Transportation

This rather abstract discussion must be applied to the particular characteristics of transportation. This requires an explanation of what economic efficiency means in transportation, how it can be measured, and how it can best be achieved. The answers to these questions in turn pose complex issues for public policy. These will be considered in the next section.

The Transportation System

The transportation system is composed of a variety of technologies organized on the basis of separate companies and industries, each performing a service for specific commodities, shippers or passengers and in relation to identifiable patterns of industrial and agricultural location.¹ To speak of a transportation system is perhaps a useful and necessary abstraction for the economist, but it must be remembered that there is a

1. For a full elaboration of this point see L.S. Keyes, Federal Control of Entry into Air Transportation (Harvard University Press, Cambridge, Massachusetts, 1951), Ch. II.

complex network of markets which the "transportation system" must serve, and not a single national market. This seemingly obvious fact is very important for analytical and policy purposes, and particularly for a discussion of economic efficiency.

Transportation technology is usually grouped in five categories: rail (freight and passenger); motor carriers (truck and bus); air transport; water carriers; and pipelines.

Economic Efficiency in Transportation

The author has been unable to find an adequate and satisfactory definition of an efficient transportation system, notwithstanding the efforts of some economists to provide one. One writer has emphasized what he calls the "twofold aspect of efficiency" where least-cost considerations must be consistent with the preferences of consumers so that a "balance" is achieved between cost and service features.²

Another writer has suggested that if the transportation system is to be truly efficient from an overall point of view, not only must the total cost for transportation be at a minimum, but the location of agriculture, industry, markets, and population would have to be such that "no different locational pattern could reduce aggregate costs of production" insofar as transport is a factor in them.³

The previous discussion implies that a complete definition of an

2. Stephen Wheatcroft, The Economics of European Air Transport (Harvard University Press, Cambridge, Massachusetts, 1956), p. 67, and by the same author, Air Transport Policy (Michael Joseph, London, 1964), p. 53.

3. J.C. Nelson, "Pricing in Transportation and Public Utilities - Discussion", American Economic Review, 45 (May, 1955), p. 636.

economically efficient transportation system would have to account for the particular characteristics of a nation's transportation system, the related institutional fabric, the specific objectives which a nation may choose for the transportation system, an assessment of future changes, and much more. Such a definition is impractical, while the above definitions pose more questions than they answer. Such definitions attempt to define in static terms the appropriate relationship between transportation and the rest of the economy.

A much more useful and realistic approach is to begin by determining the capabilities for economic efficiency in the individual carriers and modes of transport, and then to examine specific market structures and objectives for an assessment of which situations are likely to promote or to thwart economic efficiency.

Cost Structure of Individual Carriers

The transportation system is composed of individual firms and industries serving specific markets with peculiar demand and supply conditions. It is necessary therefore to examine the meaning of economic efficiency for the individual carrier and industry.

The theory of industrial organization posits the assumption that there exists for the firm and the industry a range of output which can be produced, given technological conditions, at a minimum cost. This range of output will correspond to a particular scale of operation for the firm. For any given scale of operation then, it is possible to identify a range of output which can be produced at a minimum cost. Such a production level may be described as the efficient utilization of that particular scale of operation. However, economic efficiency also requires that individual carriers achieve the most efficient scale of operation. This implies among other things that an optimum degree of seller concentration exists for the industry, and that individual carrier and

industry capacity be adjusted to demand to avoid "chronic wasteful excess capacity."⁴ Chronic excess capacity is an important measure of economic inefficiency.

A number of concepts are noted here which require further explanation. The scale of operation is clearly a primary factor and it must be treated in greater detail.

The scale of operation refers to the output producing capabilities of the firm's plant and equipment. In transport, it refers to the number and length of routes, and the number, size and operational characteristics of the operating units of equipment. The corresponding administrative and management structure is included.

The efficient scale of operation is distinguished from the efficient utilization of any given scale of operation. The former refers to economies of scale, while the latter refers to the fact that for each scale of operation there exists a level of output (or a series of output levels) which can be produced at a minimum cost. This is the efficient level of output for that scale of operation and is represented in traditional firm theory by the minimum point or points on the firm's short-run average cost curve.⁵

Economies and diseconomies of scale refer to the behavior of cost and output as the scale of operation changes. For any firm as the scale of operations increases, the firm is able to produce efficiently

4. J.S. Bain, Industrial Organization (John Wiley & Sons, New York, 1959), p. 16.

5. For the moment, demand conditions are ignored. These conditions may place limitations on the firm's ability to achieve the efficient level of output even for the minimum possible scale of operation.

at a new level of output or series of outputs.⁶ Where economies and diseconomies of scale exist, a minimum optimal scale of operation may be defined. That is, increasing the scale of operations will, up to a critical point (the minimum optimal scale), result in increasingly lower costs per unit of output. Once this critical point has been realized however, further increases in scale may not increase efficiency, and may in fact result in greater relative inefficiency.⁷

It should be realized that a study of these aspects of carrier efficiency related to the scale of operations provides little guidance for an evaluation of such dynamic factors as shifting patterns of industry and population which affect demand, changes in technology, changes in public policy or any number of other factors affecting the carrier. The scale of operation is a carrier performance concept. Nevertheless, it is useful because it establishes a number of criteria which can be used to assess carrier efficiency.

In addition to carrier efficiency, economic efficiency in transportation depends upon industry efficiency, and an efficient allocation of resources to the transportation sector as a whole.

6. The opposite may not be true. That is, given a particular output level, the firm may not be able to achieve a scale of operations which efficiently produces that level of output. This is usually not a serious problem because most firms are able to produce a range of outputs efficiently. A difficulty may arise however. If demand is such that the firm is producing the maximum output consistent with efficiency, an increase in demand which is sufficient to tax plant beyond the efficient level of operations but is not sufficient to allow optimum production at the next feasible scale of operations, leaves the firm in a position where it is producing inefficiently. The decision whether to expand the operation will depend on estimates of future demand.

7. It is important to remember that the scale of operation is not the only factor influencing carrier efficiency. While the achievement of a particular scale of operation may be a requisite for efficiency, this may be impeded by inadequate or unstable demand conditions, inefficient management, poorly conceived and executed public policy, and so on.

Particular attention is given to isolating individual industries in the transportation sector for a study of economic efficiency because it is recognized that each of the five basic modes of transport possesses characteristics (cost and service features) which makes each mode the most efficient carrier of certain commodities under very specific conditions (distance, volume, weight, speed). There exists a unique demand function for the services of a particular transportation mode. This concept that each industry has an inherent advantage is very important for economic efficiency, as will be shown below.

Given for the moment that there exists a minimum scale of operations in the firm for efficient production, if the total output of the industry is compared to this minimum scale of operations, then the maximum number of firms, or the minimum degree of seller concentration, consistent with economic efficiency becomes evident. Where no such minimum scale of operations exists, the number of firms need not be restricted for this reason alone to ensure economic efficiency for the industry.

An efficient allocation of resources to the transportation sector as a whole is a third important but very elusive requirement for economic efficiency in transportation. Having neither too little nor too much transportation to service the nation's needs is obviously a desirable objective, but any attempt to define in specific terms when such a condition is or would be attained is a very difficult task which would necessarily be so abstract as to have no value, for example, for policy making purposes. Indeed, for public policy purposes, the study of transportation economics must recognize explicitly the dynamic aspects of transportation, and this means in large part confining the analysis to

the very real practical problems posed by identifiable circumstances. Therefore, while a discussion of economic efficiency cannot ignore the relationship of transportation to other sectors of the economy on an aggregate basis, the subsequent discussion will not pursue this matter.

The concepts developed in this initial discussion of economic efficiency must be refined before such matters as competition and public intervention in relation to efficiency can be examined. A brief assessment must be made of the cost structures, investment characteristics, and the operational and technological features of the agencies of transport for evidence of inherent advantages, economies of scale, and economies of efficient utilization of scale. No attempt can be made to summarize the substantial volume of literature comprised of detailed studies on these subjects.⁸ Therefore the discussion is restricted to the presentation of the most significant issues.

It is important to realize that this material is intended only to indicate how and in what manner the presence of certain characteristics within the individual transportation industries defines the meaning of economic efficiency for each agency. Whether each agency is in fact afforded the opportunity to exploit these characteristics to the advantage of economic efficiency is quite a different matter. This additional complication will be examined in section three of this chapter.

8. See for example, John R. Meyer, Merton J. Peck, John Stenason, Charles Zwick, The Economics of Competition in the Transportation Industries (Harvard University Press, Cambridge, Massachusetts, 1959), and Ann F. Friedlaender, The Dilemma of Freight Transport Regulation (The Brookings Institution, Washington, D.C., 1969).

Railways

Railways require an enormous initial capital investment both relative to other agencies of transport and in absolute terms. To become operational, a railway must normally construct a variety of traffic structures such as maintenance and repair shops, passenger stations, freight and express depots, warehouses, signal systems, bridges, tunnels as well as build roadbeds, track, rights-of-way and yards. These investments are very expensive, resulting in high fixed costs. Compared to other carriers, fixed costs are high in relation to variable (operating) costs.⁹

The nature or character of these investments suggests a number of things. First, railways are responsible for basic facilities as well as operating equipment. Second, the basic physical plant is stationary and therefore unable to move in response to major shifts in industrial location. Third, some units of investment (roadbed, track, tunnels, bridges, signals) are not divisible into smaller units, or at least cannot be adjusted on even a reasonably continuous scale. That is, it is not possible to construct half a tunnel or bridge, or half a roadbed or track. Fourth, most of the fixed investment possesses a relatively long life.¹⁰ Fifth, significant maintenance expenses, especially for

-
9. As indicated, the many problems associated with identifying the components of fixed and variable costs, with measuring their behavior in response to a variety of changes in output and so on will not be considered here. A variety of generally accepted economic relationships will be merely stated as conclusions.
10. The economist makes a distinction between the physical life of an asset which is primarily a function of the rate of use and maintenance, and the useful economic life of an asset which is limited by economic change and technological obsolescence.

fixed plant, are indicated. Finally, the basic facilities have a substantial capacity range. For example, the number of ton-miles which can be produced over a given route is very considerable.

These cost and investment features combine to pose distinct problems for economic efficiency in the rail industry. Perhaps the most important of these is the potential for sustained excess capacity. Railway capacity¹¹ is not readily adjustable to fluctuations in market demand, whether these apply to existing routes, or because changes in industrial location affect demand. Excess capacity may therefore be more than a temporary phenomenon. Of course, the capacity of operating equipment may be adjusted more rapidly to smooth out changes in demand, but there are, as will be shown, implications for efficiency of high utilization. Excess capacity can be used to meet future demand, but difficulties may be encountered in a dynamic context. For example, technology may render facilities obsolete before the point of optimum use is attained.¹²

11. A distinction is usually made between the capacity of operating equipment (number of seats per plane, number of tons per boxcar, etc.) and the capacity of the basic facilities. The latter is discussed here, and is a function of capacity per mile of route and length of route. Capacity per mile of route is a function of the number of access channels over the route (number of railines or air channels between two points) and the speed of the operating equipment. Sometimes the two aspects of capacity are combined as in the case of available-seat-miles per year for airlines. This is a function of the number of aircraft, their capacities, the speeds at which they flew, the length of routes flown, and the frequency of flights.

12. An example of this would be where a railine has been built to an oilfield in anticipation of a substantial rate of growth of production over the useful economic life of the line, but prior to the successful development of the pipeline.

A supplementary difficulty for economic efficiency is that the high fixed costs (due in large part to railway ownership of basic facilities) create a major barrier to entry into the industry. The significance for efficiency of this structural characteristic will be made apparent when mechanisms for achieving efficiency are discussed.

The high cost and high capacity features of basic railway plant suggests significant economies can be realized from an intensive utilization of the basic structures. Very high levels of traffic volume will result in lower unit costs (until increased maintenance costs reverse the trend). The result is a more efficient utilization of the investment.

The efficient utilization of operating equipment is also clearly important. It is more efficient to have railway cars full than half-full, to avoid empty back hauling, and to have cars moving rather than stopped.

While some aspects of carrier efficiency require a detailed market study (such as how to avoid empty back hauling), it is possible to indicate with considerable certainty where each mode possesses an inherent advantage due to cost and operational features. The typical measures used are advantage by distance, load, and commodity type.¹³

Robert Fellmeth has summarized in a useful form the most important studies on this subject.¹⁴ These studies indicate that railways have a cost advantage in the transport of high-valued commodities for distances greater than 200 miles, and with a load in excess of 40,000 pounds. The

13. See, for example, Friedlaender, Ch. 3.

14. Robert C. Fellmeth, The Interstate Commerce Omission (Grossman Publishers, New York, 1970), Ch. 2. Among others, Fellmeth includes, and relies heavily upon, Meyer and Friedlaender.

advantage improves as distance and load increases.

For bulk commodities (low value), rail is not as efficient as water transport or pipeline, but rail is often by default the best carrier because water carrier routes may not exist or are subject to seasonal conditions, while pipelines cannot be used due to insufficient volume of traffic or commodity type.

Service features, such as speed, damage and frequency of service, can affect inherent advantages. These must be included because the shipper will make a decision on the basis of both cost and service features. This is because service criteria represent costs to him.¹⁵

Service features can affect the advantages which the railway has over its closest competitor, the motor carrier, but usually only when combined with a distance or load consideration. For example, motor carriage is more efficient than rail and piggyback when high speed is important, but only at distances under 200 miles and with a load under 40,000 pounds.

Service features appear to be more important in passenger transportation where, for example, the air carrier is more efficient when the cost of time is considered because of its enormous advantage in speed. This advantage increases with distance. The railway is particularly suited to high density operations over middle distances.

Fellmeth has also reviewed the literature to determine the extent of economies of scale for surface carriers. His own study on this subject indicated "no consistent economies of scale by the four measures of company size used: assets, operating revenue, gross ton-miles, or

15. Damage is an obvious example. Another example is that speed may reduce the need for large inventories.

length of main run (track)".¹⁶ Thus size, measured by these criteria, does not affect efficiency. Economies are possible from an efficient utilization of a given scale of operation, particularly a high gross ton-miles-per-mile of track.¹⁷ He also notes that one theorist has estimated the maximum size for efficient management at 20,000 employees.¹⁸ Fellmeth concludes by suggesting that "the optimum size of a rail carrier in terms of track, assets or traffic flow is still unsettled."

Motor Carriers

The cost structure of the motor carrier (truck and bus) differs radically from the railway. A basic difference is that society as a whole assumes the burden of the very high fixed costs for the construction of highways. The result is that trucks and buses require a very small initial capital investment (although they may contribute to the recovery of these costs by some system of user fees).

In contrast to the railway, there are no significant barriers to entry into the industry. The investment that is necessary (operating equipment and terminal facilities) is fairly easily adapted to changes in demand. Thus, excess capacity in operating equipment should not be a significant problem.

According to Fellmeth, the division for trucks between terminal expenses and line-haul costs is 40-60. About half of the line-haul costs are relatively fixed (license fees, etc.) while the other half (wages, fuel, etc.) are highly variable with the traffic levels.

16. Fellmeth, p. 58.

17. It has been estimated that efficient operation requires a traffic density of 3 million ton-miles per mile of track. See Friedlaender, p. 85.

18. Kent Healy, Economics of Scale in the Railroad Industry (Yale University Press, New Haven, 1961), quoted in Fellmeth, p. 58.

While terminal costs are relatively constant regardless of distance or load, a large part is variable with traffic because these costs are "based on the number and value of trucks owned or leased, a factor easily adjustable to variations in traffic flow".¹⁹ The constant elements of terminal cost can be distributed over units of operation. This means that unit costs can be reduced by increasing the length of haul and size of shipment.

Fellmeth argues once more that economies of scale do not exist. His own study found that "gross ton-mile, operating revenue, and asset measures of carrier size have no consistent correlation with carrier efficiency".²⁰ Furthermore, he argues that increased density of traffic does not improve efficiency, while improving the average length of haul multiplied by average load does. This means that "it is relatively easy to adjust units of operation to volume regardless of density".²¹

According to Fellmeth, carrier size measured in miles of route may affect efficiency. He suggests this is because terminal costs tend to increase for any given level of traffic as the number of route miles increases. That is, there is a "fixed cost per unit of geographical size". A higher density of traffic can reduce this cost by distributing it over a greater number of units. Fellmeth states that "this is the only optimum structural characteristic relevant to a competitive cost advantage within the motor carrier mode".²²

These cost and operational features have specific implications for defining the inherent advantages of the motor carrier. For high-valued commodities, the motor carrier has an advantage for distances under 200

19. Fellmeth, p. 45.

20. Fellmeth, p. 60.

21. Fellmeth, p. 61.

22. Fellmeth, p. 45.

miles, and the advantage increases as distance and load decline and as the value of the commodity increases. Only if the commodity is extremely valuable does the truck have an advantage over 200 miles.²³

Piggyback falls between the truck and rail. Piggyback, like rail, is most efficient at distances over 200 miles, but loads cannot be over 40,000 pounds. With loads under 40,000 pounds (high-value commodities), savings increase with distance for piggyback. At what point rail becomes more efficient depends largely on the level of rail terminal costs. If these are very high (reflecting uneconomic use of yards, sidings, switching equipment), the distance must be extended before the lower line haul costs of the railway overcome the high terminal costs.²⁴

Motor carrier transport is the least efficient for low valued commodities which are bulky except over very short distances with very small loads.

For passengers, the intercity bus compares favorably with rail and the private automobile, unless the automobile is full in which case it is cheaper. This is true for distances up to about 800 miles. Beyond that, airline costs become competitive even ignoring the time factor.²⁵

Fellmeth summarizes the findings as follows for rail, truck and piggyback:

"Generally, high-value traffic should be carried by piggyback or rail depending on load and distance. If inventory cost demands speed, or if switching cars in straight rail transportation might result in unrecoverable damage, piggyback should be favored..If the distance is under 200 miles (depending upon load) motor carriage is appropriate, particularly if high speed is important."²⁶

23. Fellmeth, p. 54.

24. Fellmeth, p. 54.

25. Fellmeth, p. 57.

26. Fellmeth, pp. 55-56.

Water Carriers

The cost characteristics of water carriers are similar in some respects to rail and in other respects to trucking. They share with trucking the advantage of having their basic facilities provided (in this case by nature and society at large). However, like the railway, they require a substantial capital investment because equipment is expensive relative to output. Furthermore, terminal and loading costs are very high, particularly where there is no mechanization (no bulk or containerization). Average speed is very low but line-haul costs are extremely low. Finally, like the railways, equipment has a substantial capacity.

These cost characteristics have important implications for carrier efficiency. First, unlike the railways, the units of investment, while large, are concentrated in equipment and may therefore be adapted to changes in demand. Excess capacity should not be as severe a problem as with the railways.

Second, the large capacity of the high-cost operating units combined with the terminal cost-line haul cost characteristics means that unit costs will be lowest when utilization is high and hauls are very long. Thus, efficiency depends on high utilization (a high volume of traffic) and very long hauls.

Fellmeth argues that water carriage is least efficient for high-valued commodities, with the package freighter "at best able to approximate the highest piggyback costs".²⁷ For bulk commodities, where speed is not important and distances are great, water carriage is most efficient. Of course, this is possible only where waterways exist.

²⁷. Fellmeth, p. 54.

Fellmeth reports that his study of economies of scale shows that efficiency is not related to carrier size when measured by gross ton-miles, operating revenue, or assets. However, efficiency does improve with longer routes of operation.²⁸

Pipeline

Economists have had the most success in understanding the cost behavior of pipelines. This is undoubtedly due to the fact that they are a relatively simple economic operation.

The pipeline shares many similarities with railway cost characteristics. The initial construction requires a large capital investment which is then stationary and not divisible into smaller units. Excess capacity is an obvious threat, and efficiency therefore "demands the construction of a plant which will have full and assured utilization".²⁹

An engineering production function has been developed³⁰ which indicates precisely the relations between throughput (volume/unit of time), line diameter and horsepower. The equation can be solved for any one variable when the other two are known.

Costs are related to these aspects of the production process. Maximizing efficiency means determining the optimum combinations of diameter and horsepower for any given throughput, resulting in the lowest unit cost per barrel mile.

Pipeline technology is such that unit costs decline markedly with increases in throughput, line diameter, and horsepower.³¹ For example,

28. Fellmeth, p. 62.

29. Fellmeth, p. 47.

30. Meyer, p. 127.

31. That is, for example, an increase by one percent in horsepower and line diameter will increase throughput by considerably more than one percent. See Meyer, p. 128.

it costs 2.37 mills per ton mile to transport 25,000 barrels per day through a 10-3/4 inch line, while to transport 400,000 barrels/day in a 30 inch line cost only 0.513 mills per ton mile.³²

Compared to other carriers, the pipeline has an inherent cost advantage for the transport of bulk commodities over very long distances. Obviously, only those commodities which are liquids or which can be moved in a liquid medium can be transported this way. According to Fellmeth, pipeline is a close second to water transport for bulk commodities, with pipeline costs getting closer to water carrier costs as distance increases (due mainly to the "cumulative effect of increased circuitry via water").³³

Air Transport

Airlines are not burdened with high fixed costs because airways and airports are constructed and maintained at public expense.³⁴ Fixed costs are therefore not significant compared to variable costs. The absence of high fixed costs suggests that investment is relatively flexible, allowing for fairly rapid adjustment to changes in demand. Excess capacity is not a problem at least with respect to basic facilities.

A large investment is required however to purchase the operating equipment and to construct the related ground facilities. Richard Caves

32. Meyer, p. 132.

33. Fellmeth, p. 56.

34. Of course airlines may be charged user fees for a full or partial recovery of the costs. The same is true for water carriers and motor carriers. The point is that the firm may view these costs as variable rather than a long-term fixed investment. User fees will be discussed at length below.

estimated that in 1962 a new trunk carrier would require an initial investment of some 50 million dollars to compete and operate efficiently.³⁵

In addition to the high cost of equipment, the most important cost characteristics of airline operation are related to two aspects of aircraft technology.³⁶ First, there exist substantial economies of large aircraft operation. This is largely because aircraft have become faster as they have grown in size (available seats or tons). This means that output (available seat miles/year or ton miles/year) can be increased greatly, and because the fixed and variable costs of larger aircraft do not increase proportionately as size increases, cost per unit of output declines.

Second, there are substantial economies to be gained from increasing the length of the route (stage length). This is because the costs associated with take-off and landing are almost the same regardless of the length of the flight, and therefore unit costs will fall as stage length increases. Meyer notes that these economies "are considered the most important single cost characteristic of airline operation".³⁷

A final cost characteristic with important implications for carrier efficiency is the "relative insensitivity of cost to the load factor".³⁸ That is, the cost of operating a particular aircraft over a given route is not affected substantially by how many passengers it carries. In other words, the major costs of operation (fuel, maintenance, salaries) would not vary significantly if, for example, an aircraft flying a particular route was full or only half-full. Thus the cost per passenger carried can

35. Richard E. Caves, Air Transport and Its Regulators (Harvard University Press, Cambridge, Massachusetts, 1962), Ch. 4, quoted in John B. Lansing, Transportation and Economic Policy (The Free Press, New York, 1966), p. 307.

36. Meyer, p. 136.

37. Meyer, p. 137.

38. Meyer, p. 138.

be reduced dramatically by increasing the load factor (revenue seat miles/available seat miles). Of course, high load factors for large aircraft imply a high volume or density of traffic.

Economic efficiency may be affected in several ways by these cost characteristics. Carrier efficiency is enhanced where volume of traffic and route structure³⁹ permit the use of large aircraft flying long stage lengths. The high cost of equipment can be offset greatly by increasing the utilization of the aircraft (hours flown/year).

Although significant economies can be achieved from the efficient utilization of efficient aircraft, there are no significant economies of large scale operation in the airline industry, at least for the major trunk carriers.⁴⁰

The inherent advantage of the air carrier clearly exists for the transportation of passengers over long distances, particularly when speed is important. In terms of freight, air transport is not yet able to compete on a large scale basis, but an advantage does exist for certain commodities such as perishables, legal documents, high value goods in relation to volume and weight, emergency shipments and luxury items. This advantage is very strong when time is important and distances great.

39. Route structure may be radial or 'spoke' pattern, circular, grid or linear pattern. The 'spoke' pattern is considered least efficient because of the high concentration of traffic at the center and the difficulties of achieving adequate twoway traffic density at all points. See Lansing, p. 317.

40. Lansing, p. 314. Note that this applies only to the operations of the major trunk carriers. This does not therefore suggest there is no minimum optimum scale of operation. In fact, Meyer notes that there may be an "element" of economies of scale in airline operation due to the fact that almost one half of airline costs are indirect expenses such as sales promotion, passenger services, and administration. He speculates that larger carriers have an advantage up to a point in reducing such costs per unit of output. See Meyer, p. 135.

Conclusion

In concluding this preliminary discussion on economic efficiency and transportation, it is evident that an important requirement of any policy designed to achieve economic efficiency is the proper use of transportation technology. But exploiting the full potential of each carrier for efficient operation requires first the existence of appropriate traffic flows and market structures, and secondly, carrier access to such traffic and markets.

The final section of this chapter will examine the dynamics of this interaction of carrier and market. Because individual firms compete in specific market situations, the effects of competition on economic efficiency must be assessed. Furthermore, public interest considerations may require intervention by public authorities, sometimes to offset or to correct certain deficiencies which may exist in the competitive mechanism, and sometimes to shape the transportation system to provide services which conform to public policy objectives. The implications of such intervention for economic efficiency are most important. The major part of the final section is devoted to a study of this subject.

III Achieving Economic Efficiency in Transportation

Competition

One of the most debated issues in transportation economics concerns the role which competition can play in contemporary circumstances as a mechanism to promote and secure economic efficiency in transportation.

If it is possible to suggest a consensus in this debate⁴¹, it would

⁴¹. Such a consensus is evident in the literature in both Canada and the United States.

likely be that competition can and should be relied upon to a much greater extent to perform an allocative function in the market. It is argued that the practice of regulation, which is viewed essentially as a substitute for competition where the alleged and actual deficiencies of competition and the market threaten the public interest, has not changed sufficiently to reflect what is alleged to be a radically altered condition in the transportation market structure. In particular, technological developments during the past twenty-five years are cited as evidence, in addition to some reference to the growing maturity of the economy, to suggest that the twin fears of insufficient competition (monopoly power) and excessive competition (destructive power), which prompted this regulation, are now generally unfounded. It is suggested that the new technology prevents monopoly power because the new carriers possess definite advantages in the transport of certain commodities in certain circumstances, and these carriers are available to the typical shipper. The choice gives the shipper bargaining power, and the inherent advantages ensure the survival and competitive strength of the carrier. The excessive competition found in the 19th century is unlikely because transportation markets have been greatly stabilized by the increased maturity of the economy. Even if excessive competition exists, it is argued that present regulatory policy is inappropriate to deal with it.

This does not mean that competition of the laissez-faire type is workable but rather that a presumption in favour of competition is warranted. The role of public intervention becomes primarily one of controlling the nature and extent of competition. All of this implies that a greater reliance on competition will achieve the objectives of public policy, including the objective of economic efficiency.

This argument contains a great many assumptions about the status of technology in transportation, the availability of alternatives for shippers, the bargaining power of different shippers and carriers, the type of ownership patterns among carriers, the pattern of competition in specific markets, the objectives of public policy, and so on. The remainder of this chapter will examine these complex and important issues, beginning with a study of how competition regulates the use of resources in transportation. The subsequent four parts of this section will consider the different aspects of public intervention.

One point should be emphasized at the beginning in a discussion on competition and economic efficiency. Competition in practice means that individual firms compete with one another in order to maximize profit. These firms make a number of decisions about revenues and costs and the relation of the two as they strive to maximize profit. Whether economic efficiency will be achieved by competition in effect means, will the efforts of firms to maximize profit lead to economic efficiency? Traditional firm theory suggests that this competition will discipline firms continually to reduce costs and improve services and thereby promote economic efficiency in the firm. But modern market conditions are very complex. In making their decisions about how to exploit traffic and how to assess cost and revenue factors, these firms may encounter a number of constraints and sources of "false" information which distorts the normal competitive mechanism and adversely affects economic efficiency.⁴²

⁴². For example, a trucking firm may decide to compete with a railway in a particular market and may offer the service at a lower price. This action would normally improve efficiency. However, if the railway is in fact the more efficient carrier and is charging a higher rate than its cost advantage requires, traffic moves to a less efficient carrier and economic efficiency is threatened.

For example, public intervention may be an important constraint.

It is not possible in such a limited space to examine the many possible situations which a carrier may face, and to trace the effects on economic efficiency of its actions. The discussion is confined to exploring a few typical examples of the forces at work in the market.

In transportation, two types of competition may be distinguished: intra-modal and inter-modal. Of course, competition among firms in an industry and between industries exists throughout the economy. Indeed, wherever there exists a degree of substitutability among goods and services, competition will exist. Generally speaking, public policy in the regulation of industry has concentrated on intra-industry problems, although the advent of the modern conglomerate corporation has forced to some degree a shift in attention toward inter-industry behavior and structure. Public policy in transportation has always been concerned with both types of competition. While obviously related, the two aspects will be considered separately beginning with intra-modal competition.

A systematic examination of intra-modal competition must begin with the theory of industrial organization. This theory is useful insofar as it points to the importance of structural characteristics as potential limiting factors on the efficacy of competition as a regulating device. The aspect of industrial organization theory which is most relevant to economic efficiency is the identification of market structures which will without regulation or interference lead automatically, that is, as a result of free working competition, to optimal efficiency in production for each firm in the industry.

Economists recognize a number of characteristics of market structure.

Normally included are the degree of seller concentration, the degree of buyer concentration, the degree of product differentiation, and the conditions of entry and exit to and from the industry.⁴³

The theory of the firm recognizes only one situation where competition can be expected to discipline firms to achieve efficient operations. The following market characteristics are necessary. There must be many suppliers with no one supplier providing more than an insignificant fraction of the market (each supplier faces a horizontal demand curve); economies of scale are not significant so that having many sellers is consistent with optimality in the scale of operation of each firm; diseconomies of scale exist, making it unprofitable for firms to expand their scales of operation enough to affect price; there exists no product differentiation and there are no barriers to entry or exit in the industry. If these conditions are present competition will in the long-run equate price and minimum average cost (equals marginal cost). These conditions are rarely if ever found in practice. They are important because they provide a basis for predicting what will likely happen in the absence of one or more of them.⁴⁴

Professor Bain argues that the most common departures from these conditions are: the existence of a barrier or barriers to entry (due to economies or other advantages of large scale firms, produce differentiation, or 'absolute' cost advantages); that economies of scale make possible

⁴³. Bain, Industrial Organization, Ch. 1.

⁴⁴. The fact that these conditions are never fully met in practice has prompted economists to define the concept of workable competition. Workable competition posits a lesser degree of perfection; it recognizes that product differentiation exists, that there are practical barriers to entry and buyer preferences. Competition is 'workable' where the substance of the advantages which competition can provide are forthcoming.

the expansion of firms to sizes sufficiently large for them to supply sizeable shares of the market; and that the number of sellers is for one reason or another initially small or may become small without loss of economies.⁴⁵ All of these departures from the ideal conditions are found in transportation. Where they exist, competition cannot guarantee efficient scales of operation, although they may exist in spite of the absence of pervasive competition.

An example will serve to illustrate this analysis. The airline industry is characterized by relatively free barriers to entry and by limited potential for economies of scale and effective product differentiation. However, the number of firms which should serve a particular route must be relatively small, partly for reasons of safety and efficient ground control and partly for economic reasons (the most important is the long-run development of adequate traffic density). Short-run profit considerations would undoubtedly encourage new firms to attempt to establish themselves and, in the absence of effective product differentiation, they would necessarily resort to price competition. Existing firms would retaliate, leading to disastrous rate wars. Transitional excess capacity and dynamic market instability would be common characteristics of such a market structure.⁴⁶ Both the regulation of rates and entry is indicated here.

Where major barriers to entry exist as they do in the rail and pipeline industries, the result will be a few firms competing in a given

45. Bain, p. 161

46. Wheatcroft, Air Transport Policy, pp. 55-57. Such an example clearly points to the importance of market stability in the interests of efficiency. The efficient production of output requires the rational adaptation of plant capacity to output, and a stable and reasonably predictable market is essential.

market. Effective competition (price and service) between the firms is not likely because of the possibility of retaliation. Price and service leadership may exist, but all firms will benefit by offering the same rates and substantially the same service. This collusive behavior will very likely lead to monopoly pricing to some extent, resulting in an inefficient allocation of resources. Efforts to maximize profit will almost certainly lead to monopoly pricing also where no alternative carrier exists (a captive shipper).

To summarize, intra-modal competition can work against economic efficiency both because conditions are such that short-run profit maximizing efforts by firms result in instability, excess capacity or inefficient investment levels, and because the prevailing conditions prevent any effective competition among firms. In other words, economic efficiency can be frustrated by either excessive competition or by insufficient or uneven competition between firms. In both cases, the achievement of economic efficiency requires public intervention.

Inter-modal competition requires special attention because there exists a wide range of substitutability of services between the various modes.⁴⁷ The effectiveness of inter-modal competition to promote efficiency in transportation depends upon a number of considerations. The most important of these are: (1) the degree to which the competitive circumstances of the various modes are equalized. This problem arises from the fact that a division in the ownership of facilities between the private and public sectors occurs in water, truck, and air transport;

⁴⁷. The demand curve for any particular mode is unique only over a limited range.

- (2) the extent to which multi-modal ownership of carriers exists⁴⁸;
- (3) the effect of the divided jurisdiction between federal and provincial governments over the regulation of transportation and the provision of basic facilities; and (4) the economic and pricing policies of the carriers.

Each of these aspects or conditions in the market must be examined, beginning with the equalizing of competitive circumstances. For inter-agency competition to achieve efficiency, the conditions under which the competition takes place must reflect the inherent advantages of the various modes. Essentially, there are two aspects to this issue.

The first aspect arises from the fact that public investment provides the basic facilities for water, truck, and air transport. Shippers should be guided in their selection of alternative modes of transport on the basis of the cost and service features of each. This will lead to an efficient use of resources only if the full economic and social costs of providing the service are included or reflected in the rates. This means that transportation companies which make use of publicly provided facilities should be charged for this use.⁴⁹ Transportation economists are generally agreed on the necessity of having the

⁴⁸. Multi-modal ownership is of course a highly relevant consideration in the Canadian context. A more important problem in the U.S. is that of consolidation of the facilities of individual modes.

⁴⁹. The technical problems associated with the two step process of determining the total economic and social costs of public facilities and assessing the costs on the users in accordance with their responsibility for incurring them are not discussed here.

various users pay the full costs of the facilities.⁵⁰ The user fee principle is based on this objective.⁵¹

The second aspect of equalization of competitive conditions concerns the unequal impact of regulation on common carriers as opposed to private, contract and other forms of transport. Transportation economists generally

50. It should be noted that user charges affect the competitive relationships among the modes and not the competitive structure. Furthermore, rates which reflect the full economic and social costs of the transport facility would be necessary for an efficient allocation of resources among transport agencies even in the absence of pervasive competition.

51. A conflict arises over the choice of marginal cost versus average cost pricing. Each has advantages over the other for certain functions which pricing must serve. The marginal-cost approach is often advocated where congestion and excess capacity exist, and the problem is one of efficient utilization of existing facilities. The average cost method is advocated as a better guide to efficient investment decisions for new facilities. Professor Nelson has summarized the issue this way:

"The marginal-cost pricing criterion can be helpful to the extent it stimulates an economic use of existing public facilities and as between all modes of transport. To the extent it assesses all money and social costs of highways on users and on the right users, it will strengthen shippers' and travelers' choices in rationally allocating traffic between alternative facilities and modes ... On the other hand, the loosening of all constraints of user revenue coverage of total costs on wasteful investment under the marginal-cost pricing scheme would work against a more efficient resource allocation; and it has yet to be shown that sufficient investment in economically-justifiable public transport facilities could be assured without the revenue-coverage criterion. Hence, some combination of marginal-cost pricing and revenue-coverage policies would seem better adapted to creating an efficient role for highways and other public-facility transport modes than either criterion by itself."

J.C. Nelson, "The Pricing of Highway, Waterway, and Airway Facilities", American Economic Review Papers and Proceedings 52 (May 1962), p. 435.

agree that both private and contract carriers provide services which are in the public interest⁵² and indeed, these carriers often serve as an effective check on the rate and service policies of the regulated carriers (common carriers). However, it is argued that the requirements of publishing rate schedules and securing permission to adjust rates introduces an element of rigidity into the pricing procedures of the common carriers. This restricts the competitive strength of the carrier.⁵³ The suggested remedy is to allow the common carriers greater freedom in pricing their services and reducing as much as possible the time delay in making competitive rate adjustments.

Multi-modal ownership has an important bearing on the nature of inter-modal competition. Multi-modal ownership refers generally to the ownership by railroads of other modes of transport. It is difficult to conceive of any other arrangement becoming commonplace. It should also be noted that multi-modal ownership may affect efficiency favourably in ways which are not strictly related to inter-modal competition. An example is the use of trucks by railroads for purely ancillary purposes.

If it could be demonstrated that significant economies of scale are possible through the operation of several modes of transport by one firm, multi-modal ownership could be recommended in the interests of efficiency. The absence of major economies of scale in transportation largely rule out such a proposition.

In the absence of regulation over rates and entry, multi-modal

52. The distinction is most important in highway transport, although services are also provided in both water and air transport in Canada which are not subject to rate regulation.

53. See, for example, D.F. Pegrum, Transportation: Economics and Public Policy (R.D. Irwin, Homewood, III., 1959), p. 491.

ownership would undoubtedly lead to a restriction of inter-modal competition. The railways could use their substantial resources to effectively destroy competing carriers. But where rate and entry regulation is designed so that firms must adhere to standards set for that mode⁵⁴, multi-modal ownership has very little effect on inter-modal competition and, given the limitations on economies of scale, is not likely to improve efficiency. In fact, to the extent that there are diseconomies of large scale management, multi-modal ownership may promote inefficiency.

A related issue of some importance in Canada is the effect of diversification on inter-modal competition and efficiency. Diversification refers to the practice of purchasing industries which are not related to transportation. An example in this country is the Canadian Pacific Railway. Apart from the question of combines legislation, the major issue is the use of revenues from such external sources to subsidize the operation of transportation services. Whether such subsidies are used to support unremunerative services, or whether they are used to drive out competition, efficiency may be affected adversely. The relation of subsidy to economic efficiency is discussed in detail below.

The divided jurisdiction in Canada between federal and provincial governments⁵⁵ over the regulation of transport and the provision of facilities is perhaps a more important consideration in a discussion on transport coordination than inter-modal competition. Certainly,

⁵⁴. For example, railway trucking firms and other trucking firms are given equal treatment in the use of piggyback rail transport.

⁵⁵. This paper is not concerned with the problem of urban transportation and the role of municipal governments. However, the growing importance of this problem both for the internal needs of the city, and as an integral part of a national transportation system should be noted.

institutional barriers which result from a divided jurisdiction in powers may impede efforts at coordination. It may also encourage a type of inter-modal competition which is detrimental to efficiency. This is likely to occur where the objectives of the provincial and federal governments differ with respect to transportation. Provincial governments regulate intra-provincial trucking and build provincial highways. One important objective of highway development is to provide efficient transportation for the economic growth needs of the province. But provincial highway systems which are designed and administered to promote economical motor transport may adversely affect efficiency in the transportation system for the country as a whole.⁵⁶ One historical aspect of this problem has been the reluctance of Western Prairie provinces to give federal authorities the power to regulate intra-provincial motor transport, because the provincial governments have wanted a device to control the potential monopoly power of the railways.

A final aspect of inter-modal competition which will be studied is the effects on efficiency which the pricing policies of the carriers have. Whether competition between modes leads to efficient solutions in transportation will depend in part on whether the prices charged by the carriers reflect the costs of that carrier. The most important example is the value-of-service pricing policy. There is some controversy

⁵⁶. Particularly important here is the issue of financing highways. If user fees are administered so that substantial subsidies are made to motor transport, the effect on inter-agency competition (road-rail competition) may be that other regions of the country are burdened with excessive transportation costs because the railways are deprived of traffic which they might otherwise carry, and they must recover the lost revenue from other regions of the country.

over whether this form of discriminatory pricing is promoting an efficient transportation system.

The theory of price discrimination states that where the demand elasticities for a product or service differ between markets, it is in the interests of the firm to charge two different prices, or more, depending upon the number of markets where unique demand elasticities exist. The difference in price does not reflect differences in cost but reflects differences in demand for the product among buyers. To be successful, three conditions must be present. First, there must exist substantial barriers to entry in the industry, otherwise prices which were much above average cost would attract competitors. Second, there can be no possibility of resale of the product. Such a possibility would lead to the movement of goods from the low price market to the high price market, and thereby drive prices down.⁵⁷ Third, there must be a way for the producer to distinguish between the buyers in the different markets.

The transportation industry meets all of these conditions. The first condition has two aspects. Prior to the development of trucking, buses and pipelines, the railways had a virtual monopoly on transport and were able to discriminate on the basis of the value of the product being transported. However, as these competitive modes developed, the ability of the railway to discriminate on the basis of value was lessened and value discrimination was replaced by geographical discrimination. Thus barriers to entry in the railway industry in addition to the absence of competition from other modes of transport has made discriminatory pricing possible. The second condition is obviously met because transporta-

57. The difference in price would of course have to exceed transportation costs at a minimum.

tion is a service which cannot be bought and stored. The third condition is satisfied because the value of the commodity indicates the elasticity of demand for the transportation service. That is, high rates have been charged on high-valued commodities and low rates have applied to low-valued commodities.⁵⁸

The case for supporting the value-of-service policy is normally based on the claim that demand-oriented pricing can within limits achieve a fuller utilization of capacity and will therefore reduce costs. This is particularly desirable where such capacity would exist in any case. It is argued that by charging low rates on low-valued commodities and high rates on higher-valued goods which can 'afford' higher rates, the latter rates are not as high as they would be in the absence of the movement of low-valued commodities (assuming that the rates for the low-valued goods contribute something to overhead costs). The railways, the producers, and the consumer all benefit. Finally, value-of-service pricing is recommended because it contributes toward the financial stability of the firm.

Many writers support this analysis. One group suggests that the "logic is impeccable and one must agree with its essential truths".⁵⁹ The reasons given include the argument that a system of pricing which demanded no variations in price from cost would ignore the essential need for price variations to meet short-term fluctuations in demand, to utilize

58. This is based on the well documented and somewhat obvious fact that an increase in transportation charges will not be as 'important' for high-valued commodities because the transportation rate will constitute a relatively small proportion of the price of the commodity. It is also assumed that the elasticity of that commodity is reasonably inelastic.

59. Meyer, p. 182.

off-peak capacity, and to make competitive adjustments.⁶⁰

The objections to the theory include the following arguments. First, the two conditions mentioned, that the low rates must at least cover the marginal costs of the movement and that such commodities would not move at higher rates, are often not met. Even where these conditions are realized however, a number of direct and indirect inefficiencies may occur. For example, the practice of allowing railways to compete in a given market where one railway has a direct route and the other(s) an indirect route may provide each railway with an opportunity to more than cover the marginal costs involved, but it may also create or increase excess capacity, thereby increasing the cost of transport from an industry-wide viewpoint.⁶¹

Another criticism is that any departure from marginal cost pricing in transportation will create an inefficient allocation of resources in other sectors of the economy. This is particularly serious in transport because transport is an important input into so many production processes. Distortion in the cost of transport will be reflected in distorted input and production decisions by other industries. In other words, strict marginal-cost pricing introduces inefficiencies in transport but does not distort the external allocative process, whereas value-of-service pricing leads to efficient transport at the expense of distortion in the allocative process elsewhere in the economy.

Economists are generally agreed on the point that these secondary

60. Meyer, p. 168.

61. The rate making practice here would involve either a grouping of rates which cannot be justified solely as an administrative procedure, or a long-haul short-haul rate.

inefficiencies cannot be measured precisely. However, different emphasis on the importance of these primary and secondary effects leads to different policy proposals. For example, there is the conclusion that, on balance, "the only kind of value-of-service rate-making that would appear worth maintaining for the economy is that which emerges from competition and managerial freedom in pricing".⁶² On the other hand, the argument that rates must reflect marginal costs has been disputed on the grounds that prices and marginal costs are not equated in the rest of the economy and, furthermore, marginal cost pricing may ensure efficient investment decisions. This argument places the emphasis on securing efficiency in transport at the possible expense of some inefficiency elsewhere.⁶³

Another criticism of the value-of-service policy is that it is essentially a tax device which transfers income not on any ethical or user cost basis, but simply on the basis of elasticity of demand for the service.⁶⁴

The most important objection to the value-of-service policy is that it has created an inefficient allocation of traffic among competing carriers. By maintaining some rates at levels considerably above average cost, this pricing policy has encouraged trucks, and to a lesser extent airlines and buses, to compete for and secure traffic for which they do not have a cost advantage, but which is because of the excessively high

62. Meyer, p. 186. This should not suggest the absence of any regulation. Competition which leads to an increase in operating costs, a deterioration of service, excess capacity and so on, cannot be considered appropriate for the achievement of economic efficiency.

63. M.J. Roberts, "Transportation Problems: Discussion," American Economic Review Papers and Proceedings, 52 (May 1962), p. 446.

64. Meyer, p. 185.

rail rates, profitable for them.⁶⁵

This last criticism of value-of-service pricing suggests that an important distinction should be made in assessing the application of this policy. The distinction is between the use of this policy to satisfy the revenue requirements of the carrier in the face of major structural imbalances in the distribution of available traffic, and the use of the policy to alleviate short-run excess capacity problems. The latter usage of value-of-service pricing is desirable and leads to an efficient utilization of resources. The other usage noted does not improve efficiency, and in fact it may encourage a further misallocation of resources. Prices are maintained so far above cost levels that it is profitable for an inefficient carrier to compete. Railways in North America have used value-of-service pricing in this way. This problem will be examined in greater detail in subsequent chapters.

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It is apparent from this study of intra-modal and inter-modal competition that neither form of competition can be expected to automatically achieve economic efficiency in transportation. Depending upon the circumstances, the efforts of firms to maximize profits may be inconsistent with the requirements for economic efficiency in several ways. Excess capacity can result when investment prompted by the hope for short-term

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gains is excessive relative to traffic volume. On the other hand, insufficient investment and monopoly pricing are possible when competition cannot act as a disciplining device for a variety of reasons.

Certain types of competition are artificial and do not promote efficiency by increasing efforts to provide services at lower cost. This type of competition is based on the existing inefficient allocation of resources, with the result that carriers are providing services for which they are not the most efficient producer. Competition under these conditions simply increases the misallocation of resources.

Finally, competition may simply not exist, and not because of collusive behavior among firms, but because there may be only one carrier in a particular market.

These conclusions illustrate how important it is to study the specific conditions in a given market when transportation policy is developed. It is not sufficient to rely on an imprecise definition or model of competition when the objective is economic efficiency.

Public Intervention

The discussion on competition suggests that one of the most important reasons for public intervention in transportation is to correct the undesirable effects of competition (and to preserve the desirable effects), and where competition does not exist (e.g. where a "natural" monopoly exists), to act as a substitute in order to effect the same results.

A second major reason for public intervention which is equally important and valid is that public policy objectives for transportation may lay outside the competence of the market mechanism. In other words, even if competition is working perfectly, the results may be inconsistent

with the public interest.

The objectives of public policy in transportation may be economic, social or political. Economic efficiency may be one such objective, while others could be to promote regional development and equity, to bring about socially desirable locational patterns for industry and communities, to enhance agricultural and industrial output, to exploit natural resources, to raise per capita consumption, to strengthen a country's system of national defence, to promote political unity, and so on. Transportation may have a direct role to play in the achievement of such objectives.

Many of these objectives will not be realized without public intervention in some form. For example, objectives which require the provision of unprofitable services, or the development of services at a rate not warranted by commercial considerations will likely involve public subsidy, ownership and investment.

The discussion on economic efficiency to this point has concentrated on defining efficiency in the individual carrier and the industry, and examining whether under competitive market conditions the carriers are likely to achieve economic efficiency. A third and final dimension of the problem of economic efficiency must now be introduced. It derives from the fact already mentioned that public policy may pursue objectives in transportation which cannot be achieved by the market mechanism. An appropriate public policy in transportation is needed to reconcile economic efficiency with these objectives.

The remainder of this chapter will consider this added complexity as well as examine the forms of public intervention which are intended to correct deficiencies in the competitive mechanism.

Public intervention takes the form of regulation and a variety of promotional policies. The most important aspects of regulation include the regulation of the structure and level of rates, and control over entry and exit. The most significant elements of promotional policy are public investment and subsidy.

Regulation of Rates Entry and Exit

The objectives of regulation will of course depend upon the objectives of public policy in transportation. Traditionally, the regulation of rates and access to markets has been used to correct deficiencies in the market mechanism which threaten the public interest. One leading text from the United States has summarized the main objectives of regulation as follows: (1) to prevent unreasonable prices and earnings where competition is absent either because of exclusive franchises that limit entry of other firms or a technology which creates natural monopolies; (2) to ensure sufficient profits for the development and expansion of the industry because competition is excessive and threatens adequate profits; (3) to prevent discrimination between shippers with unequal bargaining power because competition is absent; and (4) to maintain certain unremunerative services considered to be in the public interest.⁶⁶

These objectives reflect a particular definition of the public interest. In this case regulation is intended to prevent the antisocial use of monopoly power, to promote the use of uneconomic but socially desirable services, and to achieve stability for the future development of the industry.

⁶⁶. Meyer, pp. 11-12.

These and other similar objectives of regulation have important and often direct implications for economic efficiency. For example, unreasonable prices are not only socially undesirable but they reflect a misallocation of resources. In this case the objectives of economic efficiency and equitable treatment are compatible. However, if the objective of regulation is to ensure sufficient profits for the development of an agency of transport for reasons of national defence, it is possible that economic efficiency will be compromised. For example, the protected carrier could deprive other carriers of needed traffic to ensure efficient operations.

Given the objectives of public policy, it is desirable to design and adopt a policy on the regulation of rates and entry which will achieve both those objectives and economic efficiency. Where the two are not compatible, a choice must be made in public policy.

The following discussion on the regulation of rates and entry to and from markets will examine some of the more important problems associated with regulation and the objective of economic efficiency.

In a dynamic transportation environment, rate regulation must deal simultaneously with a number of somewhat conflicting aspects of efficiency. The pricing system must help to rationalize past imbalances in transport investment while at the same time encourage a rational division of traffic among competing modes and an efficient utilization of existing plant. It must do this in such a way that there will exist sufficient incentive for management to devise and implement measures which result in lower cost and better quality service. In short, rate regulation must rationalize past investment, ensure optimum utilization of existing plant and promote efficient levels of future investment.

In achieving these objectives, the regulatory authorities must balance the two functions of the rate system: the revenue requirement or capital attraction function, and the demand control or consumer rationing function. The distinction is essentially between the level of rates and the structure of the rate system. Both functions require a cost-of-service approach. The revenue requirement dictates that rates on the whole must cover costs as a whole including a rate of return on investment which will attract capital. The consumer rationing function requires that the rates for each kind and amount of service be based on the marginal costs of the service. However, a conflict arises between the two functions because the concept of cost for each function is different.⁶⁷ The costs relevant to the revenue requirement function are the operating expenses and the historically incurred sunk costs. For the rationing function, the relevant costs are those which can be avoided or minimized by the curtailment of output. Which cost base is used will clearly depend on what objectives are pursued. The revenue requirement base must be considered where the financial integrity of the firm and its capacity to effect optimum levels of future investment are the primary considerations. These objectives may conflict with optimum utilization of existing facilities, when the consumer rationing cost base would be more appropriate.

In making these decisions the regulatory authorities must have sufficient information available on market structures and the cost and service features of the various modes. For example, if railways are to

⁶⁷. For a discussion of this see J.C. Bonbright, "Two Partly Conflicting Standards of Reasonable Public Utility Rates", American Economic Review Papers and Proceedings, 47 (May 1957), pp. 386-393.

adjust their physical plant over the long-run to the volume of traffic which should be theirs on the basis of cost and service characteristics, regulatory bodies must decide how this can best be achieved. One approach which may be used is to allow the railways to reduce rates temporarily on traffic to increase the utilization of their plant. The rates would be low enough to attract the traffic but not high enough to cover fixed costs and a rate of return. This policy would increase the utilization of scarce resources while encouraging the adjustment of plant to optimum levels.

The regulation of minimum and maximum rates is often advocated as a policy which recognizes both an expanded role for competition in transportation and the ever-present limitations of such competition.⁶⁸ The function of minimum rate regulation is to ensure that rates are at least compensatory.⁶⁹ The regulation of maximum rates is considered a necessary partner-policy to minimum rate regulation. Maximum rate regulation ensures that strict control is exercised over the practice of cross-subsidization and monopoly pricing.

The argument that minimum rate regulation should be adopted assumes that competition is intensive enough to force rates below a minimum cost level. Whether such competition will fulfill the other conditions

68. For an excellent discussion of minimum rate regulation in the United States see T.C. Bigham, "Regulation of Minimum Rates in Transportation," Quarterly Journal of Economics, (February 1947), pp. 206-231.

69. A debate exists over whether the minimum should be short-run costs or long-run costs. The latter is generally preferred, despite the many difficulties of estimation. However, it is not clear whether the appropriate long run costs are the marginal or average costs. See Friedlaender, p. 131.

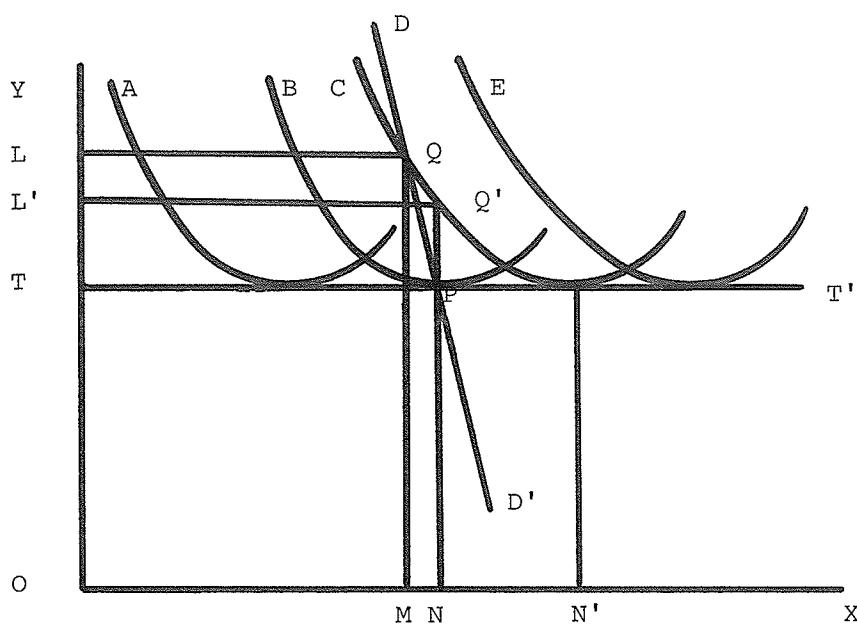
necessary for economic efficiency must be determined. If the competition which encourages non-compensatory rates is isolated in particular markets or in particular regions, minimum rate regulation at that point may not deter the development of inefficiency in other markets or regions. In addition, the widespread reduction of rates to meet pervasive market and regional competition may deplete revenues and introduce instability even though individual rates are all compensatory.

Management will not normally reduce rates below costs because net revenues may suffer. However, such a practice may be designed to eliminate competitors, and it is here that minimum rate regulation is important for economic efficiency. Periodic rate wars and destructive competition creates chaotic conditions which adversely affects the orderly and efficient development of services.

Another example may be cited to demonstrate the limitations of rate regulation to achieve efficient solutions in transportation. Fixing rates which just cover the cost of production for the firms in a particular agency will not produce an optimal solution where the number and size of firms is not at an optimum in the first place. That is, the adjustment of rates to eliminate higher-than-normal rates of return will not necessarily result in the adjustment of investment to the optimum level. This may be demonstrated graphically:⁷⁰

70. Keyes, Federal Control of Entry into Air Transportation, p. 8.

Figure 1



The curves A, B, C, E, represent industry average cost curves. OX, the x-axis, represents output. OY represents unit cost in the industry and price. For simplicity, it is assumed that there are no external economies or diseconomies, or internal economies of scale. The minimum points of the average cost curves are therefore equi-distant from OX. It is also assumed that TT' is a straight line - that a continuous number of points exists. This will be true where firm sizes can be adjusted marginally. DD' is the demand curve.

Given DD' and assuming that the number of firms is such that C is the appropriate cost curve, actual output is equal to LQ. This is the maximum output which can be sold profitably given the number of firms. But optimum output is TP. Thus unit costs are higher (by LP) and output lower (by MN) than the optimum would require. Clearly, there are too many firms in the industry. If the regulatory authorities were

to reduce rates to equal OT , the demand curve would then be TPD' . Consumers would demand output ON , but unit costs would be OL' , making such a solution unprofitable. Rather, the firms would produce output ON' creating an excess output NN' . A subsidy equal to $TL'Q'P$ would allow firms to produce only output ON , but they would do so inefficiently. The best solution is to reduce the number of firms, making B the appropriate cost curve.

The regulation of entry and exit involves not only control over the entrance of new firms into the industry, but also the expansion of existing firms into new markets. Control over exit refers to the regulation of abandonment of services or voluntary disinvestment.⁷¹

Most writers who oppose free entry and exit do so because it would in their opinion result in a number of instabilities. These writers point to the unstable and inefficient transport markets of the past, where free entry and exit combined with expectations of short-run profits did produce intolerable situations.

Supporters of control over entry and exit recognize that history provides many examples of such inefficiency, but they argue that the circumstances surrounding contemporary transport markets are such that these conditions would not be repeated. In the first place there exist today major barriers to entry in the railroad and pipeline industries. Barriers of product differentiation also exist. Finally, the operation of a modern transport firm requires a high degree of managerial sophistication. Established firms therefore have considerable advantages over new firms.

71. The case of entry of new transport technology which requires assistance from government will be considered in a section on subsidy.

In the absence of control over entry, 'free' entry would not exist in fact.

Advocates of a policy of free entry in contemporary circumstances base their argument on the necessity of having effective competitive checks on the various agencies of transport. It is not so much a matter today of reducing barriers to entry for new firms.⁷² The major issue is that of entry by existing firms into new markets which are served by other firms. An example which is often cited is the use of piggyback facilities for non-railway trucking firms. Or, a regional air carrier may apply for a service in a market which is part of the transcontinental route structure.

It is difficult to conclude without a detailed market study how economic efficiency may be affected under such circumstances. Certainly, efficiency requires that trucking firms have piggyback facilities available to them. The example of regional air carriers is much less obvious. Ideally, traffic density should be such that the airline uses the most efficient aircraft available and in the most efficient manner possible. Where these conditions cannot be met, an assessment must be made of the effects on both the regional carrier and the trunk carrier which the additional service will have.

It is difficult to imagine many situations where free entry and exit can exist without adverse consequences for the development of

72. Indeed, in the U.S. for example, the major problem is one of rationalizing the capacity of existing firms. In railroading, the indicated policy is one of consolidation and merger rather than the proliferation of firms. In Canada, the idea of merger between the Canadian National and Canadian Pacific has been raised at various times, and particularly during the 1930's. In the airline industry, both transcontinental and regional, the problem is not one of an insufficient number of firms, but developing sufficient density of traffic to ensure optimal operations.

efficient services and efficient carriers. At the same time, protecting carriers from competition can seriously hamper efforts to achieve efficiency. For one thing, there is the danger that managerial initiative may be stifled by years of detailed and inflexible regulation. But there are other equally serious problems created by inadequate and improper regulation.

In his study of the regulation of entry in the American trucking industry, Robert Fellmeth concludes that regulation has produced at least four undesirable effects: unhealthy market concentration, service rather than rate competition, inefficiency (excess capacity and high costs), and high rates and an irrational rate structure.⁷³ He argues that efforts by regulatory authorities to restrict competition in order to assure common carrier service, adequate investment and technological progress, the avoidance of chaotic conditions and duplication of investment and excess capacity, have in fact produced these harmful effects. Fellmeth attributes this to the fact that competition, which he argues can, with a minimum of regulation (safety and insurance standards), achieve economic efficiency in trucking, does not in fact exist because the operating grants given by the regulatory authorities are so restricted according to type of vehicle, point of origin and destination (even to specific road), area, and particular commodity, that carriers operate with a minimum of competition. Because carriers operate with limited authority as to route, direction and commodities, inefficiency results from unnecessary mileage, empty mileage and partial loads.

Finally, serious difficulties can be created by the partial regulation of economic activity. When public authorities regulate some

73. Fellmeth, Ch. 4.

aspects of economic activity in order to achieve efficiency, but they leave other areas to the carriers to resolve through free competition, the result may be greater inefficiency in the non-regulated areas. For example, the regulation of rates in the airline industry may be necessary to ensure the efficient development of services. But the carriers may then decide to compete in the area of equipment choice for the passenger. All carriers are under considerable pressure to purchase the new type of aircraft (e.g. the jumbo-jet) to maintain their share of the market. But the new aircraft may augment the problem of achieving efficient carrier operations because load factors may fall, maintenance procedures may have to be changed, airports may be congested and so on.

There is a general consensus of support among transportation economists for a public policy which recognizes the importance of abandonment of existing services and facilities for the achievement of economic efficiency.

A number of considerations are important in abandonment cases. The first is determining whether consumers of the particular service are willing to pay the costs of the service. In other words, rate adjustments and even rate discrimination should be implemented to test willingness to pay.⁷⁴ Furthermore, expectations of future demand must have a bearing on such decisions. Where it is apparent that neither rate adjustment nor a growth in market demand will provide sufficient revenues for the service, abandonment would seem justified.

Where alternative facilities exist and consumers have demonstrated a preference for the alternative, abandonment is justified. In this case, abandonment may promote a more efficient utilization of the alternative

⁷⁴. Meyer, p. 252.

facilities by diverting traffic to it. This would occur where there is not sufficient traffic to efficiently utilize two carriers.

Where alternative facilities do not exist, it is a matter for public policy to decide how required services will be maintained. The use of rate discrimination has been a traditional method but it may create inefficiency. If, for example, a railway is serving a number of remote communities where traffic density is low relative to facility capacity, rate discrimination would not be an efficient policy. If under such circumstances alternative transport services are not available, a form of direct subsidy is indicated.⁷⁵

Conclusion

If economic efficiency is an objective of public policy, regulatory authorities must strive to mitigate the undesirable effects of both excessive competition and too little competition while assuring the carriers an adequate opportunity to exploit the advantages of their technology.

In general, this means regulation must be designed and implemented so that carriers have access to an adequate volume of traffic to utilize present capacity efficiently, an appropriate route structure, an opportunity to adjust efficiently to the future growth of traffic, and sufficient incentive to develop efficient services.

The specific policies for rate regulation and the control over entry into markets will depend on which carrier is being regulated and the particular circumstances in the markets in question. This is because the meaning of economic efficiency differs from mode to mode, while markets differ greatly when assessed according to types and regularity of traffic, the nature of competition among carriers, and so on.

⁷⁵. Another aspect of abandonment worth mentioning occurs where unremunerative transport rates have been a factor in attracting industry to communities along a railine. If rates are raised, these industries may lose their competitive advantage and the result could be serious dislocation in the community.

Finally, it is important to examine not only how regulation may rectify existing problems in the markets, but how regulation may itself create inefficiency and other undesirable effects.

Coordination

Coordination in transportation refers to the objective of fitting each mode of transport into its proper place (defined by its cost and service advantages) in the transportation system. It is important to distinguish between the coordination of decision-making by regulatory authorities (which refers to the structure of the regulatory bodies), and the coordination or integration of the different modes of transport, which may require, in addition to effective coordination in decision-making by regulatory bodies, a variety of forms of public intervention.

The importance of emphasizing coordination is due to problems in the organizational structure of transport and the institutional structure of the agencies which control it. The most important dimensions of organizational structure are multi-modal ownership and public provision of transportation facilities. The structure of the regulating agencies must be such that decisions which affect the position of one carrier or mode can and will be evaluated in terms of their impact on other carriers and modes. Each aspect of the organization of transportation is important for economic efficiency.

It was noted earlier that multi-modal ownership may improve coordination and efficiency because it allows the railways to offer a total transportation service. It could reduce wasteful inter-modal competitive struggles and some duplication of facilities, and it could reduce some of the inequalities between carriers, particularly the extent of business risks between the railways and those forms of transport which

have a large part of their fixed capital needs supplied by government. However, it was noted earlier that regulation may be necessary to ensure that the independent operators of the various agencies can perform their functions efficiently, and to create the conditions necessary for the promotion of better standards of service and cost-reducing innovation.

Where substantial multi-modal ownership exists, as it does in Canada, the achievement of a coordinated transport system becomes in part a managerial problem as well as one for public policy.

As for public investment, coordination in transport is made more complex because the responsibility for investment decision-making is split, not only between the carriers and government, but between levels of government. The structure of the regulating agencies and their relationship to those officials in government responsible for public investment must allow for a wide range of consultation and coordination of decision-making.

One of the most basic requirements for coordination is that the agencies responsible for regulating individual modes of transport have a proper perspective on the relationships between the modes of transport. A great deal of criticism has been levelled at the type of organization where each agency is supervised by a separate authority. The danger is that each authority may become preoccupied with the problems of that mode so that the impact of its decisions on other modes is not fully understood or considered. There is also the tendency to develop a vested interest in the preservation of all elements and characteristics of that mode.

Rather than supervise each mode with separate and somewhat independent bodies, it has been suggested that all modes be regulated by a single body. Such an organization would make possible a greater degree of

coordination in decision-making. Whether this is achieved however depends to a large extent on the attitudes and capacities of individual members of the regulatory boards, and on the carriers themselves. The historical development of the modes and their respective regulatory boards has a bearing on such attitudes. This is particularly true where basic changes occur in the structure of the transport industry over time. Indeed, the growing complexity and intensity of inter-modal competition is often the key factor in proposals for a more coordinated approach to regulation. A reorganization of regulatory boards may require not only new attitudes and approaches, but new skills and knowledge. In Canada, the effectiveness of such a reorganization has yet to be fully tested.

The importance of coordination between those responsible for regulation and public investment is due to the fact that the objectives of each are often dependent upon one another. For example, investment decisions affect the capacity of the transportation system while regulation hopes to achieve an optimum utilization of this capacity.

Unifying the functions of regulation and promotion (investment and subsidy) and establishing a substantial research facility to support them under a single authority in the executive branch of the government is a sound policy. A national transportation policy can be developed and implemented with a clear delineation of responsibility for regulation, for the programming of federal investment and subsidy, for the supervision of the expenditure for investment and subsidy, and for the determination and collection of charges for the use of federal facilities. In those areas where provincial and local jurisdiction prevails, a similar structure should be implemented and effective channels of communication established with federal authorities.

Subsidy

The economic justification for subsidy is generally based on three broad considerations or arguments. The first is the 'infant industry' argument, that the development of new systems of transportation may require public support for a certain period of time before they can be expected to earn their own way. The direct and indirect benefits which accrue as a result of using the new technology justify subsidization.

The second argument frequently used is that there are important social, political or other non-economic objectives which require the service.

A third argument used to justify subsidization is based on the concept of consumer surplus. The consumer surplus is a real economic benefit accruing to the purchaser of a commodity or service, and arises because, while each unit of a good which the consumer buys costs him only as much as the last unit is worth, the first units are worth more to him than the last. Therefore, he enjoys a surplus of utility over market value on each of these units. He will stop buying when he no longer realizes a surplus. This argument assumes a less than perfectly elastic demand curve, or, in other words, the existence of a diminishing marginal utility.

Given that a gap may exist between the total utility of a service and its total market value, a subsidy may be recommended in the event that a particular service cannot support itself from a strictly financial standpoint. The subsidy is justified because the economic benefits to be realized exceed the market value of the service.

The justification for subsidy is properly a matter for the political process. The task of the economist is to determine the type of subsidy most suitable for the desired objectives.

Before turning to an examination of the various methods of subsidy, it will be useful to examine very briefly a number of approaches which have been used in transportation to determine which services deserve public support. The first, commonly used in air transport, is the 'use-it-or-lose-it' test. A particular service is considered essential on the basis of the traffic which it generates. Routes which meet the minimum requirements are subsidized, while those that do not are abandoned.

A second approach has been called the 'functional' approach.⁷⁶ A service is considered essential in the public interest on the basis of certain assumptions regarding the functions of transport. For example, subsidized service to remote areas may be justified by assuming that the public interest requires an equalization of the standards of public service to all regions. Other examples include subsidized service to promote a better distribution of industry or to develop smaller centres to ease the costs of excessive congestion in densely populated areas. A major problem with this approach is the difficulty of measuring the benefits to be gained.

A third approach which attempts to deal with this problem of measurement is the cost-benefit approach. It attempts to "quantify the costs and benefits of a given public expenditure as a guide to public policy".⁷⁷ However, this approach is not without difficulties either, particularly where basically different programmes must be compared.

Regardless of the formula which is used to determine whether a particular service is essential in the public interest and therefore

76. See Studnicki-Gizbert, p. 108.

77. Studnicki-Gizbert, p. 111.

deserving of public assistance, transportation economists are generally in agreement on the conditions which must be met if such assistance is to promote economic efficiency.

The first condition requires that subsidies be implemented in such a manner as to prevent distortions in the competitive transport market. This condition applies regardless of whether the subsidy is designed to assist the carrier or certain shippers or regions. If the carrier is being subsidized, the regulatory policy should be the same as it would in the absence of such assistance. That is, the rates which are charged by the carrier should reflect the costs of providing the service within those limits established earlier.^{77A} The effect of the subsidy is to provide the necessary revenues to cover the losses caused by rates set at or below cost levels. If the subsidy is applied to lowering the rates below cost, a misallocation of traffic and resources would occur.⁷⁸

On the other hand, if the purpose of the subsidy is to aid shippers or depressed regions, the subsidy should be available to all carriers.

77A. See pp. 43-48 above. It must be emphasized that regardless of whether marginal or average cost pricing is used, the determination of the precise cost of a particular service involves a considerable degree of arbitrariness, particularly when fixed costs are significant. The arbitrariness arises in trying to apply a portion of the fixed costs to the particular service. This fact should be borne in mind whenever costs are being discussed. For a more detailed discussion of this problem, see the Royal Commission on Transportation (Queen's Printer, Ottawa, 1961), I, pp. 54-58.

78. It is particularly important that rates reflect costs where alternative modes of transport are available. Where the service is supplied by only one mode, the immediate effect of low subsidized rates may appear to be minimal in terms of efficiency, but prolonged subsidization could result in inefficient industrial location and a stifling of the development of alternative modes over the long-run.

A subsidy to some carriers but not others would result in an uneconomic allocation of traffic to the favoured carrier. Such a practice would make it difficult to determine the proper role of each agency in the system, and could result in an overexpansion of the favoured agency.

The second condition requires that implementation of the subsidy encourage maximum efficiency in the performance of the carrier. The subsidy should provide an incentive to the carrier to reduce costs, improve service and generally improve efficiency. This condition usually requires subsidies fixed in amount over a particular period of time. While all subsidies should encourage efficient operations, subsidies specifically designed to do so are normally used in situations where a new type of service is introduced which is economically sound but which faces serious obstacles in getting started; or where a carrier requires assistance to abandon services which cannot be justified on economic grounds and where abandonment would result in greater efficiency.

Before discussing the various methods of subsidy, a number of indirect forms of subsidy should be recognized. One such subsidy occurs in the public provision of facilities for users who are not required to pay the full cost of those facilities. Another example is government

supported research in fields not directly related to transportation which produces cost-saving or improved service innovations in transport.⁷⁹ If other agencies must support their own research, a competitive disadvantage may result insofar as the full costs of each agency are distorted.⁸⁰

Several methods for applying subsidies exist. For example, the carrier does the best it can in the market and is given a bloc sum of money to cover its deficit, including a fair rate of return on investment. This policy is advocated in circumstances where a particular carrier or agency performs a single type of service. A number of difficulties may be encountered with this 'needs' approach where efficiency is the objective. For one thing, it weakens incentives on the part of the subsidized carrier because any increase in profit simply decreases subsidy revenues. Furthermore, unless detailed supervision of management decisions in the investment area is contemplated, it "involves the determination of the extent and direction of Government support not on a basis of a clear definition of national need but on the basis of decisions of private management largely outside the scope of government control."⁸¹ Finally, there is the possibility that a great deal of controversy may develop over the purpose of the subsidy because the component parts of the

79. An example from the U.S. experience is the practice of providing research monies to aircraft manufactures to develop more sophisticated military aircraft. While a good deal of this research may have no practical application for commercial aircraft, some benefits undoubtedly accrue to commercial operations.

80. It is sometimes argued that a form of subsidy exists where one carrier is privately owned and another is publically owned. It is argued that because government can obtain capital at lower interest rates, the private carrier is placed at a competitive disadvantage. But this advantage appears justified as one of the advantages of public ownership.

81. Keyes, p. 348.

subsidy are not easily identified. These objections to the 'needs' approach render such a policy unsatisfactory from the standpoint of economic efficiency.

A more precise method of subsidization links the subsidy to a specific problem which the carrier must face. Most commonly, the subsidy is provided to maintain a service which is marginal or is losing money but which is required in the public interest. There are several advantages to this method. First, such an approach requires government to be specific in defining the need. Second, this approach relieves the carriers of the necessity of employing a policy of cross-subsidization by providing for adequate revenues on loss routes. Finally, by clearly identifying the subsidy, the possibility of controversy is lessened.

In addition to tying subsidies to specific routes, some writers have advocated equipment subsidies, particularly for the regional air carriers.⁸² Such a subsidy is recommended because the carriers need modern aircraft to achieve fleet rationalization and a more efficient utilization of equipment, but they face serious transitional problems with financing and problems related to making effective the introduction of new equipment. It is particularly important for economic efficiency that the subsidy be strictly administered and properly evaluated to prevent carriers from becoming "over-equipped".⁸³

82. Studnicki-Gizbert, p. 70. For a specific proposal in the Canadian context, see R.F. Harris, The Economic Efficiency of Regional Air Carriers in the National Transportation System (Center for Transportation Studies, University of Manitoba, January 1969), pp. 12-13.

83. Studnicki-Gizbert, p. 72.

Public and Private Ownership

As far as economic efficiency is concerned, the basic issue is whether public enterprise can provide the services more efficiently or as efficiently as private enterprise or regulated private enterprise. Economists seem agreed that no general case can be made as to the greater relative efficiency of regulated private enterprise or public enterprise.⁸⁴

It is generally argued in the so-called capitalist countries that the "free enterprise" system (competition among privately-owned companies in the marketplace) is the best (or most desirable) mechanism for achieving an efficient allocation of resources and efficient solutions to complex problems or situations. The discussion to this point indicates that there are compelling reasons why competition among firms may not produce results consistent with the public interest. Similarly, there are important reasons why public ownership may be a more desirable form of corporate organization than private ownership.

First, public ownership may be the only means under certain circumstances by which necessary services can be supplied. Such was the case when the Canadian National Railways was formed in 1923, following a period of over-expansion and subsequent bankruptcy by a number of privately-managed railway firms.^{84A} Another example was the establishment of Trans-Canada Airlines during the depression. In this case public enterprise provided the only means of supplying a new and necessary service. Thus, regulation of private enterprise cannot substitute for public ownership where a service does not already exist.

84. Two such views are expressed in C. Wilcox, Public Policies Toward Business (R.D. Irwin, Chicago, 1955), Ch. 29, and T.N. Brewis and others, Canadian Economic Policy (MacMillan Company of Canada, Toronto, 1965), Ch. 33.

84A. It is assumed in the case of the CNR that the government chose to assume the bonded debt rather than offer the bankrupt lines at market value to the private sector.

Second, public ownership may, under certain circumstances, be a more effective form of organization to achieve public policy objectives. The public corporation may be more sensitive to the needs of the public than the private corporation, whose primary responsibility is to maximize profit for the shareholders. This argument assumes that the citizen is able to make his or her wishes better known and acted upon through the elected official than through the marketplace.

It should be realized that the feasibility of government ownership depends not simply upon its administrative advantages or disadvantages in serving the objectives of public policy. It depends in large measure on the economic and political climate which prevails in the particular country in question. Where there exists a good deal of suspicion of public as opposed to private enterprise, the effective and efficient operation of public enterprise may be impossible or simply not proposed. Conversely, public enterprise may be endorsed as a matter of principle.

The feasibility of public enterprise also depends to some degree on the nature of the central government, demographic characteristics, and attitudes concerning the proper role of government in economic activity.

"There is evidence that those democratic countries which have evolved strong central governments, because of moderate geographic size, a homogeneous population, and an important measure of dependency for economic welfare upon the effective operation of government, have been able to work out a basis for conducting public enterprise efficiently."⁸⁵

In Canada the existence of public enterprise in transportation and

85. Brewis, p. 75.

its proven ability to serve the public interest reflects in part the important role which transportation has played in the establishment and maintenance of national unity and development throughout history, and, in part, it reflects the concomitant development of effective governmental machinery for efficient management, and a nation of people prepared to accept and support such enterprise.

Assuming that an appropriate economic and political environment exists for public enterprise and the necessary skills to manage complex transportation services are available to government, there are a number of issues related to public ownership and economic efficiency.

Students of industrial organization⁸⁶ generally recognize three potential problems with public enterprise, two of which are directly related to efficiency. The problems are achieving efficiency and progress without the profit motive, reconciling the potential conflict between efficiency and public accountability, and protecting the interests of the consumer of services. This last problem refers to poor service, high prices and discriminatory treatment, which may reflect inefficiency in operation.

The first problem may arise because of a lack of motivation for improved performance by management in public enterprise. But this will depend upon several factors. The motivation which senior management has to provide efficient operations will depend upon the relationship which it has with the stockholders, the government. The form of organization is important. The government department is usually not recommended because it too easily fosters political interference and bureaucratic

⁸⁶. See Wilcox, Ch. 29.

control. The public corporation is favoured because it operates as any other enterprise except that the government (federal or provincial) appoints the senior management who are responsible to the legislature through a minister of the cabinet. Where management is permitted to be independent in this fashion, motivation and incentive will exist.

Another factor which bears on the issue of motivation is prestige. The divorce of ownership and control, and the growth of the corporation to a multi-national status has had the effect of providing incentives to senior management beyond simple profit-maximization. Prestige is also measured by the size of assets, annual sales figure, influence in political and social affairs and so on.

The second potentially serious problem with public enterprise is the reconciliation of efficiency in operations with public accountability. However, as governments become more mature and the electorate more sophisticated, the possibility of political influence seriously impeding the efficient operation of public enterprise becomes more remote. The public corporation must be free from major political pressure and partisan interference to ensure continuity of policy and sufficient flexibility, and to encourage initiative and innovation. In this regard, it is very important that governments publicly declare what is expected of the public corporation in relation to national transportation policy. It is important that subsidies and other forms of public assistance be made explicit both as to the amount and the objectives. Such a policy would help clarify any special roles which such enterprise is expected to perform in the public interest.

The experience in Canada with public enterprise in transportation confirms the view that efficiency need not be compromised by establishing public corporations. Both Air Canada⁸⁷ and the Canadian National Railways⁸⁸ have demonstrated this point.

87. See S. Wheatcroft, Airline Competition in Canada (Department of Transport, Ottawa, May 1958).

88. See A.W. Currie, Canadian Transportation Economics (University of Toronto Press, Toronto, 1967), p. 436.

Chapter 2

Report of the Royal Commission on Transportation 1951

The Royal Commission on Transportation under the Chairmanship of W.F.A. Turgeon was officially appointed on December 29, 1948 by Order in Council P.C. 6033 of the St. Laurent Government.

The appointment of the Commission resulted from a series of protests launched by all provincial governments, with the exceptions of Ontario and Quebec. The protests arose because of dramatic changes in the level and structure of railway freight rates following the Second World War.

During World War II, the Government instituted a system of price control which meant that transportation charges were effectively "frozen". Despite the fact that the cost of materials and labour increased substantially prior to the imposition of controls, the railways prospered as a result of record traffic volumes secured during the war effort. At the end of the war, traffic volumes fell off considerably while the costs of material and labour to the railways increased. Confronted with a serious deterioration of their financial position, the railways applied for a general increase of 30% in freight rates on October 9, 1946. This was the first application for a general increase in rates since 1920. In fact, general reductions in rates were effected in 1921 and 1922. A 21% increase was awarded effective April 8, 1948. This decision was appealed to the Governor-in-Council by all provinces, again with the exceptions of Ontario and Quebec.

On April 7, 1948, the Governor-in-Council ordered the Board of Transport Commissioners to undertake a general freight rate investigation.

The seven provincial premiers rejected this solution and appeared before the Federal Cabinet on April 26th to suggest the appointment of a Royal Commission. Generally speaking, the provinces felt that the Board was not the appropriate body to undertake a study related to the equalization of geographic, climatic and economic conditions, to which the provinces wished to address themselves.

The St. Laurent Government formally rejected the request for a Royal Commission on July 12, 1948. However, a costly labour settlement retroactive to March 1, 1948, prompted the railways to request a further 20% increase in rates on July 27th. Ultimately, both the 21% and the 20% increases were awarded. Both awards were made after several appeals from the provinces, at which time requests were again made for the appointment of a Royal Commission. The Government finally agreed to appoint the Commission in December of 1948.

Terms of Reference

The terms of reference of the Royal Commission reflect, not surprisingly, the positions taken by the provinces when they appeared before the Federal Cabinet to argue their case for the appointment of a Royal Commission. The provinces asked for, and were granted an opportunity to make recommendations with regard to the terms of reference.

The Order in Council instructed the Commission to conduct an examination of "all questions of economic policy within the jurisdiction of Parliament arising out of the operation and maintenance of national transportation".¹ Six specific instructions were given, as follows:

1. Report of the Royal Commission on Transportation 1951 (King's Printer, Ottawa, 1951), p. 5.

- (a) review and report upon the effect, if any, of economic, geographic or other disadvantages under which certain sections of Canada find themselves in relation to the various transportation services therein, and recommend what measures should be initiated in order that the national transportation policy may best serve the general economic well-being of all Canada;
- (b) review the Railway Act with respect to such matters as guidance to the Board in general freight rate revisions, competitive rates, international rates, etc., and recommend such amendments therein as may appear to them to be advisable;
- (c) review the capital structure of the Canadian National Railway Company and report on the advisability, (or otherwise), of establishing and maintaining the fixed charges of that Company on a basis comparable to other major railways in North America;
- (d) review the present-day accounting methods and statistical procedure of railways in Canada, and report upon the advisability of adopting, (or otherwise), measures conducive to uniformity in such matters, and upon other related problems such as depreciation accounting, the segregation of assets, revenues and other incomes, etc., as between railway and non-railway items;
- (e) review and report on the results achieved under the Canadian National-Canadian Pacific Act, 1933, and amendments thereto, making such recommendations as the present situation warrants;
- (f) report upon any feature of the Railway Act (or railway legislation generally) that might advantageously be revised or amended in view of present-day conditions.

In addition, the terms of reference authorized the Commission "to include in its examination and to report upon all matters which the Members of the Commission may consider pertinent or relevant to the general scope of the inquiry". Finally, the terms of reference excluded from the scope of the inquiry an examination of the "performance of functions which, under the Railway Act, are within the exclusive jurisdiction of the Board of Transport Commissioners",²

2. Report, p. 6.

Economic Efficiency and the Terms of Reference

The terms of reference provide considerable scope for an examination of economic efficiency. Among the specific instructions, references may be found to the relationship between regional economic development and transportation, the rate-making policies of regulatory authorities, the financial policies of public and private transportation companies, the use of external funds by diversified corporations to support transportation services, the viability of legislation to promote cooperation between transportation companies, and the status of existing railway legislation.

In addition to these specific instructions, the Commission is given a free hand to examine anything which it considers relevant to national transportation policy and the economic well-being of the country.

In spite of the wide latitude given by the terms of reference, the Commission does not pay much attention to economic efficiency directly. The main focus of the Report lies elsewhere. First priority is given to examining the problem which prompted the appointment of the Commission in the first place, namely inequitable railway freight rates. The Commission devotes most of its Report to an assessment of how the present railway value-of-service pricing policy, combined with horizontal rate increases, might be changed so that railways can have sufficient revenues to be viable enterprises, while no undue burden is placed upon certain shippers or regions of the country. The inequitable application of rate increases is aggravated by the development of competition from the trucking industry.

An examination of this central and recurring theme in the Report should not preclude a full discussion on economic efficiency, or any

other major objective of transportation policy. But the Commission chooses a very narrow interpretation of the terms of reference, and does not, as it suggests in the Introduction, examine "all matters affecting Canada's economic policy in respect to transportation".³ Furthermore, the Commission seems confused about how, or in fact whether it should interpret national transportation policy. It will be shown that the Commission justifies certain proposals on the basis that they are promoting certain objectives of national transportation policy which it identifies, while on other occasions it declines to comment on existing policy or proposed changes because it considers the subject a matter of government policy. Finally, the Commission in its Report displays a strong tendency to define the scope of any particular problem by reference to the nature of complaints received from a variety of interest groups at the public hearings.

It is this approach which the Commission chooses to adopt and its failure to clarify its responsibilities which results in a good deal of superficiality, confusion and inconsistency in the analysis of economic efficiency. It is important to note at this time the most significant limitations on this analysis imposed by the considerations just discussed.

The Commission does not develop an overview of national transportation policy or its priorities, nor does it consider in any meaningful way the relationship between the objectives of policy and the role of the carriers, of public intervention or of competition in achieving these objectives. In a Report consisting of seventeen chapters and some 280 pages, only one chapter, seven pages in length, is devoted to an overall assessment of national transportation policy.⁴ This chapter is

3. Report, p. 14.

4. Chapter XVIII, pp. 274-280.

intended to answer the instruction asking the Commission to recommend "what measures should be initiated in order that the national transportation policy may best serve the general well-being of all Canada". But the scope of the discussion is defined by certain submissions made to the Commission "urging the 'co-ordination' and 'integration' of all forms of transport media and the regulation of all by one and the same Board".⁵ The Commission recommends the establishment of a Central Authority to combine the functions of the Board of Transport Commissioners, the Air Transport Board, and the Canadian Maritime Commission.

Significantly, the stated objective of this reorganization of regulatory authority is economic efficiency. The objective of regulation is not merely to correct abuses, but that of "developing adequate and efficient transportation services and of 'coordinating and harmonizing' the service in the public interest".⁶ It is desirable to apply similar principles of regulation to all modes of transport "for the accomplishment of a common purpose, viz. that of enabling each agency to perform its service advantageously and properly as part of a national transportation structure".⁷ Each of the five means of transportation are "inseparably inter-related" and they should "be so regulated as to serve not only individually but collectively in meeting the country's needs".⁸

These explicit references to economic efficiency are very misleading

5. Report, p. 276.

6. Ibid., p. 279.

7. Ibid., p. 280.

8. Ibid., p. 279.

however. First of all, they are the only direct statements made by the Commission in the Report about either the desirability, or in fact the existence of economic efficiency as an objective of public policy. Second, and more important, the Commission fails to show how economic efficiency relates to the several other objectives of public policy to which it refers throughout the Report. These statements on economic efficiency are made in complete isolation from the analysis in other parts of the Report. This practice of the Commission will be studied throughout the chapter. But an example will illustrate the point.

The Commission lists in this same chapter of the Report seventeen facts which it claims establish the "broad outlines of Canada's national transportation policy".⁹ These facts show how public intervention in the form of subsidies, public ownership and regulation has had, and continues to have as its objectives to promote national unity, regional economic development, resource development, national defence, and to overcome the disadvantages of great distances for certain shippers. No mention is made here of economic efficiency as an objective of national transportation policy.

Thus, while the Commission makes several individual references throughout the Report to various objectives of national transportation policy, there is no attempt made to assess the relative importance of these objectives, or whether they are consistent with one another, or in what sense the pursuit of one or more of the objectives may compromise others. Competition, regulation, subsidy, public and private ownership of carriers and transportation facilities, and the coordination of transportation services are not examined in relation to these objectives

9. Report, pp. 274-275.

of national policy, or in relation to one another. It is not surprising therefore to find the Commission recommending, for example, a subsidy to a carrier to offset the effects of great distance for the long-haul shipper, without considering how such a subsidy will effect the development of other carriers, or any other aspect of economic efficiency.¹⁰

The Commission tends to be excessively preoccupied with directly answering complaints raised by groups appearing before it. One result of this practice is that the Report lacks an overall coherence, and issues seem to develop out of context. This is important for our purposes because, while it is not unusual to find isolated comments in the Report which have a direct bearing on economic efficiency, most of these comments are made in response to complaints, and appear without comment on their significance for economic efficiency. The reader is warned therefore that a compilation of these comments in this study will tend to exaggerate the relative importance which they assume in the Report.

In conclusion, it may be argued that the terms of reference offer the Commission considerable scope for its inquiry into national transportation policy. For whatever the reasons may be, the Commission chooses a particularly narrow interpretation of the terms of reference, and conceives of its responsibility largely as a mediator in the disputes between the carriers, the shippers and certain disadvantaged regions of Canada. The Commission seeks solutions to these disputes which are consistent with national transportation policy.

However, the objectives of national transportation policy and their relative importance are not specified. Furthermore, the carriers

10. This and other examples will be studied later in this chapter.

are not studied as separate industries for an assessment of their particular needs in order to become and remain viable, efficient enterprises. The Report therefore ignores the most important problems relating to economic efficiency developed in Chapter 1 of this study.

Before proceeding with a detailed study of these matters, it will be useful to present a brief summary of the central theme, or basic problem which the Commission undertakes to study.

Statement of Central Theme of Report

The Report contains a Memorandum on Transportation by one of the Commissioners, Dr. Harold Innis, which is "intended as an elaboration of the basic argument behind the conclusions of the Report".¹¹ It provides a summary of the basic problem as viewed by the Commission.

The Memorandum traces the evolution of Canada's transportation system from pre-Confederation times to the date of the Report. The historical analysis presented attempts to develop the relationship between federal and provincial policies adopted with respect to transport for particular national goals, the response in terms of rate-making and other policies by the public and private transportation industry, and the impact of both areas of policy on the economic development of the regions of Canada.

What emerges is a general statement of Canada's transportation problem, if it can be stated as such. The most important aspects of the problem are the following:

- (1) The value-of-service principle adopted by the railways as the basic ingredient of the rate structure from the very beginning

11. Report, p. 294.

of their existence was a response to the difficult financial problems facing the railways. The financial problems were caused in part by competition from other modes of transport, particularly the canals, which forced rail rates down. But the financial problems were also due to specific provincial and federal policies. Canals charged low rates in part due to inherent cost advantages, but also because canals were built at public expense and tolls were abolished in 1903. Furthermore, considerations of national unity and national defence required the construction of railways over vast expanses of undeveloped territory. Rates had to be low to ensure that goods carried over great distances would be competitive in eastern and international markets. Policies such as the Crowsnest Pass Agreement and the Manitoba Agreement were implemented to ensure that low rates were realized. When the railways responded by raising rates on high valued commodities and in regions not subject to inter-modal competition, both the provincial and federal governments responded in turn by building competing railway lines, and thereby further inflated the financial problems of the railway industry. The most important long-run effect of such policies on the structure of the transport sector was to increase the scope for competition from the trucking industry. The cost and service characteristics of the truck made it particularly suitable as a carrier for small bulk, high valued goods moving over relatively short distances. It was precisely this traffic which suffered inflated rates to generate sufficient revenues for the railways. One source appearing before the Commission

estimated that net revenues lost to the trucks due to competition amounted to some 120 to 130 million dollars annually.¹²

- (2) Because the development of this competitive structure was confined mainly to the St. Lawrence region, the benefits were distributed unevenly across the country. This created considerable difficulties for the achievement of a balanced, diversified economic development. That is, more and better highways in the St. Lawrence region encouraged a greater diversification of industry which, in turn, increased the financial strength of that region and this allowed an even greater extension and improvement of highways in the region. Conversely, the other regions of Canada could not escape the burden of higher rates on the long-haul traffic. The result was to encourage specialization in production. Furthermore, this tendency towards increased specialization in regions outside Central Canada was intensified by the practice of the regulatory bodies in permitting horizontal rate increases for the railways. Across-the-board increases in rates by the same percentage where the rate structure emphasizes the value-of-service principle means that some rates will increase more rapidly in absolute amounts than others. That is, "the rate structure is stretched upwards from the bottom".¹³ The result is that those areas which specialize in the production of primary products (e.g. grain in the Prairies, lumber in

12. Report, p.296.

13. Ibid., p. 298.

British Columbia) will be encouraged to continue to do so. Such areas will be forced to pay higher rates on manufactured goods imported to the region, particularly if Canadian industry is protected by a customs tariff, as it has been since the early construction of the railways. Policies such as the reduction in rates on some goods moving westward under the Crowsnest Pass Agreement, and the Maritime Freight Rates Act, have helped to alleviate these effects to some extent.

- (3) These developments have served to increase the monopolistic behavior of the two major railway systems who are forced by the process described above to concentrate increasingly on preserving their position vis-a-vis other carriers. Furthermore, continuous erosion of traffic by truck competition intensifies the search by railways for new protected areas, and increases the importance of maintaining a monopoly on long haul traffic where cost advantages are greatest. In effect, the railways become increasingly preoccupied with the search for revenues at the expense of developing traffic. Problems of considerable importance arise from this latter development for provincial and particularly federal governments. Emphasis on revenue rather than traffic "involves a neglect of regions and compels both federal and provincial governments to take an active interest in the problems of production and traffic".¹⁴
- (4) International traffic plays an important role in the Canadian

¹⁴. Report, p. 300.

railway system. The Report estimates that some 23% of the total traffic of the railways is international traffic. While both the American Interstate Commerce Commission and the Canadian Board of Transport Commissioners must approve rate increases, the practice has been that the Board of Transport Commissioners always grants increases of the same amount and at the same time as the Interstate Commerce Commission. Thus, a significant portion of railway revenues is effectively beyond the control of the Canadian regulatory authorities. The implications are compounded because rate increases have historically occurred more often and in greater amounts in the U.S. than in Canada.

On result of this practice has been to lessen somewhat, in the short-run, the pressure by Canadian railways on the Board of Transport Commissioners for rate increases. In the long run however, as the disparity between domestic and international rates increases, the Board may find the railways demanding increases in domestic rates to achieve a balance with international and American domestic rates. Furthermore, increases in rates are nearly always followed by demands for increased wages, and Canadian unions are on record as favouring wage parity with the U.S. Because the great majority of international traffic is confined to the Central Canadian region, the initial inflationary impact will be felt greatest there. In the long run, the specific dislocative effects of such inflationary pressure on the rate level will depend on where the railways decide to apply the increases, However, it is

likely that the problem of international traffic will serve to intensify the developments discussed above.

To summarize the essential point, it is apparent that the development of the trucking industry in particular has created a crisis of a financial nature for the railways. The railways have responded to the loss of significant volumes of traffic to the trucks by continuing to use the value-of-service pricing system and by applying for horizontal rate increases. But this process is self-defeating because the higher railway rates on selected non-competitive traffic go to provide needed revenues, the less traffic will move by rail. At the same time, these policies are highly discriminatory in their effects on certain shippers and regions.

The Report makes a number of recommendations to solve this basic problem. The common element underlying all the proposals is the notion that the railways have become relatively obsolescent in the face of growing competition from the trucking industry, and the Commission considers it necessary to propose an appropriate method of adjusting the burden of this obsolescence.

"Confederation involved the building of railways notably the Intercolonial and the Canadian Pacific Railway and the deepening of canals. As canals became relatively obsolescent in the face of railway competition, the burden of debt was carried by Parliament. As railways became relatively obsolescent in the face of competition from motor vehicles sponsored by stronger regions the burden of debt has been conspicuously carried by weaker regions as well as by Parliament. Solution to the transportation problem includes consideration of the adjustment of the burden of obsolescence by transcontinental railways which will preclude undue imposition on long hauls and on regions other than the St. Lawrence and in a sense a defeat of the purposes of Confederation."¹⁵

15. Report, p. 301.

The proposals made by the Commission are almost exclusively designed to create greater equity in the railway freight rate structure for the different regions of Canada. In proposing greater equity, the Commission is in fact arguing that equity has become the most important priority for national transportation policy. Economic efficiency is not singled out at any point, with the one exception already noted. The reasons why this particular objective of national transportation policy is emphasized are not made perfectly clear in the Report. Certainly the terms of reference do not limit the inquiry in this regard. As noted earlier, the failure of the Commission to develop its arguments and policy proposals in relation to a full assessment of the objectives of national transportation policy renders the task of identifying and explaining its position with respect to such objectives very difficult.

The remainder of this chapter is devoted to an examination of the major proposals made in the Report from the point of view of how they will affect the objective of economic efficiency. This assessment is divided into five parts; namely competition, regulation, coordination, subsidy, and public and private ownership in transportation.

Competition

The major part of the discussion on competition focuses on the historical development of rail-truck competition and its effects on economic development in regions outside Central Canada. The Memorandum by Dr. Innis is the most concise and thorough presentation of the Commission's views on this subject. With few exceptions, the discussion in the remainder of the Report provides further elaboration of points raised in the Memorandum.

Neither the Memorandum nor the main body of the Report analyses

the specific role played by competition in the national transportation system, nor do they examine the potential for competition in the future development of that system. Competition is not assessed as a mechanism which can achieve particular objectives under specified conditions. It is studied solely as a contributing factor to the increasing inequity of the freight rate structure.

It is important to remember that the views of the Commission on the different aspects of competition discussed here are scattered throughout the Report and must often be taken out of the context in which they appear. They are examined here in a particular order for easy reference to the discussion in Chapter 1 of this study. The different aspects of competition examined here are not part of an overall assessment of competition in the Report.

Intra-modal Competition

The discussion on intra-modal competition is confined to the railway, trucking and airline industries, and is referred to in a sketchy fashion in several parts of the Report.

With respect to the railway industry, the Commission supports a preservation of the status quo. It rejects suggestions for both amalgamation of the two major railway systems¹⁶ and for enforced co-operation by the Board of Transport Commissioners.¹⁷ It argues that the period of excessive competition between the CNR and the CPR ended about the time of the Depression, following a few years of intense competition over markets after the formation of the CNR in 1923. The Canadian

16. Report, pp. 128-130.

17. Ibid., p. 223.

National - Canadian Pacific Act of 1933, an Act which provided for voluntary co-operation between the railways to save on some duplication and waste, is, for the Commission, evidence of the "emergence of a position of relative equilibrium between the two systems".¹⁸ The market structure is described as duopolistic. The potential harmful effects of an essentially monopolistic structure can, and is being contained by competition from other modes of transport, particularly the trucks, and by effective regulation of rates. The Commission is satisfied that competition in the rail industry is providing the public with efficient rail transportation.

"There appears to be no reason to recommend any change in a transportation policy which has provided the Canadian people with efficient rail transportation services through the medium of a private company competing with a government-owned railway."¹⁹

The Commission says almost nothing about intra-modal competition in the trucking industry. The one chapter set aside to discuss trucking was written only because the trucks have an important bearing on the welfare of the railways.²⁰ The Report simply notes that there are common carriers, contract carriers and private carriers. The chapter concludes with the following statement:

"...the trucks are not to be considered as providing merely a form of unfair competition to the railways. The trucking industry has a useful part to play in transportation. A large part of its business is applied to the hauling of traffic which would not go to the railways in any event."²¹

18. Report, p. 296.

19. Ibid., p. 199.

20. Chapter XV, pp. 265-266.

21. Ibid., p. 266.

Implicit in these remarks is the concept of inherent advantage. There is also a suggestion that the trucks, and therefore the railways, are presently transporting cargo for which they do not possess an inherent advantage. But no assessment is made of the extent of this misallocation of resources. It is stated simply as a matter of fact.

With respect to intra-modal competition in the air transport industry, the Commission briefly states the policy of the Air Transport Board.

"In order that the public may continue to enjoy the advantages of regular air services, operators of such services must be assured of all the traffic offered between the points which they serve. However, the Air Transport Board has made some exceptions to the established policy and has permitted competition when satisfied that such competition would not unduly prejudice the scheduled operator."²²

No attempt is made to explain the content of this policy.

Inter-modal Competition

Chapter 1 of this study examined the circumstances in which inter-modal competition could be expected to work as an effective mechanism to achieve a reasonably efficient transportation system. Four factors were discussed in particular.

The first factor, the equalization of competitive circumstances, receives very little attention in the Report. Reference is made on several occasions to the fact that there is a division in ownership between the basic facilities and the operating equipment for water

²². Report, p. 261.

carriers, trucks and airlines, with the public sector responsible for providing the basic facilities, and maintaining them. The Report does not examine the rationale for these policies, but notes that historically the federal and provincial governments have assumed these responsibilities.

The important issue of user fees is discussed by the Commission only because it was dealt with in some submissions. It is dismissed very quickly in the Report. Brief mention of the subject is made in Chapter XIII, Air Transportation, where the Commission argues:

"The submission that air transportation should bear an increasing portion of the cost incurred in providing operating facilities raises a question for administrative decision and not for any recommendation by this Commission."²³

The matter is also referred to in Chapter XV, Motor Vehicles, where the Commission states:

"All that can be said here on this point is that it is in the interest of the provinces to collect at least enough revenue from this source (licence fees and gasoline taxes from trucks) to avoid loss if not to make a profit, and there does not appear to be any reason to suppose that this is not being done."²⁴

The Commission does not suggest why it would be in the interests of the provinces to do so. The only other reference to user charges is made in the Memorandum where it is noted that the tolls on canals were abolished in 1903.²⁵

Apart from user fees, the other aspect of the equalization of competitive conditions concerns the unequal impact of regulation on

23. Report, p. 261.

24. Ibid., p. 266.

25. Ibid., p. 294.

common carriers as opposed to private, contract and other forms of transport. The Report studies this problem in a section called Delays in Freight Rate Revenue Cases.²⁶ In this case, the railways complained of the difficulties they suffer as a result of the time lag between their requests for rate increases, which follow very closely increases in costs due to wage increases and other cost factors, and the granting of the increases by the Board of Transport Commissioners. The railways are therefore at a disadvantage compared to non-regulated carriers. The Report recommends that where a prima facie case can be made for increases or decreases in rates, the Board "should consider the desirability of granting interim relief at the earliest possible date pending the final disposition of the application".²⁷

The second factor which has an important bearing on inter-modal competition is multi-modal ownership. The Commission supports the principle of multi-modal ownership provided the services so purchased are supplementary in nature. The Commission is satisfied that "there is no evidence to show that there is danger at present of the railways stiffling competition by ownership of trucks. This would be a matter to be dealt with if and when the occasion arises".²⁸ Multi-modal ownership is desirable if it improves the coordination of transportation services.

The related issue of the use of non-rail revenues generated by businesses owned by transportation companies receives passing mention in the Report. The Commission recommends that a system of accounting be

26. Report, pp. 71-72.

27. Ibid., p. 72.

28. Ibid., p. 153

adopted which would "clearly distinguish between rail and non-rail items".²⁹ However, this recommendation is intended simply to provide more information in the rate cases before the Board of Transport Commissioners and is not recommended for the purpose of limiting the use of non-rail revenues for railway purposes. The Commission supports the policy of the CPR to use "all funds at its disposal for railway purposes."³⁰

This kind of cross-subsidization, involving the use of funds from one sector of a corporation's activities (which may be completely unrelated to transportation) to subsidize transportation services, may easily affect economic efficiency adversely. This will occur, for example, if the traffic acquired or retained by the subsidized carrier should in fact be transported by a different carrier or firm, because the latter is more efficient.

The suggestion was made to the Commission that the Federal Government should subsidize the losses incurred on passenger service which the railways supply as a matter of public policy. The complainants objected to the practice of the railways subsidizing their losses by raising freight rates, particularly on the long haul traffic. The Commission rejects the proposal for federal subsidy and approves the practice of internal subsidization of unprofitable passenger services with higher than necessary freight rates.

29. Report, p. 218.

30. Ibid., p. 216.

Such a policy is not a desirable one from the point of view of an efficient allocation of resources because rates will not reflect the cost of the service. Whether the federal government should subsidize the passenger services which they consider necessary in the public interest, or whether they should require the railways to support such services with non-rail revenues is a highly controversial subject involving debate over the historical responsibilities of the CPR. The relevant point here is that this type of cross-subsidization tends to misallocate resources in favor of passenger traffic at the expense of freight.

A third factor affecting inter-modal competition is the matter of divided jurisdiction between federal and provincial governments over the regulation of transport and the provision of basic facilities. Control over provincial trucking and the building of highways by the individual provinces introduces a complicating factor into the competitive structure of the transportation industry. An important historical aspect of this problem has been the use by the provinces of their control over the trucks to fight monopoly practices by the railways. The Commission points out, for example, that the Province of Manitoba has a deliberate policy of maintaining truck rates below rail rates, and has refused to increase truck rates by the same percentage as rail rates increase.³¹

Apart from noting such policies, the Commission makes no attempt to examine what the effects of such policies have been on the development of the transportation system.

The final aspect of inter-modal competition which has important implications for economic efficiency is the pricing policies of the carriers, and particularly the value-of-service policy. The Commission

31. Report, p. 297.

objects to this policy because it produces inequity in the freight rate structure, but it does not specifically examine the effects of this policy on the allocation of resources in transportation. This subject is examined in greater detail in the following section.

Regulation

The major portion of the Report's analysis on rates and the regulation of rates is directed at finding a solution to the complaint of inequity made by the provinces before the Commission. The Report summarizes this complaint as follows:

"In essence the main cause of complaint is that the outlying provinces suffer a disadvantage because of the long distances which separate them from their sources of supply and also from their markets - long haul traffic, in some cases on primary commodities of low value, subjected to horizontal increases in rates."³²

The various regions proposed different solutions to the problem. All regions wanted lower rates and all were determined to retain any existing advantages, such as statutory rates. The Maritime Provinces wanted a restoration of the effect which The Maritime Freight Rates Act had in 1927, but which had subsequently deteriorated. The Prairie Provinces and British Columbia favoured equilization of the rate structure across Canada. Saskatchewan also proposed a system of subsidies which would compensate the region for the adverse effects of national policies, which it claimed do not bear equally on all regions.

The Report examines a great many types of rates and rate-making practices. Included are horizontal rate increases, standard mileage class rates, competitive rates, distributing class rates, agreed

³². Report, p. 45

charges, terminal rates, transcontinental rates, international rates, export and import rates, interline rates, developmental rates, expiry rates, rate grouping, tapering of freight rates, stop-off privileges, value of service rate-making, the mixing rule, statutory rates, and the freight classification. The most important for our purposes are the horizontal rate-making method, competitive rates, developmental rates, agreed charges, and statutory rates. The discussion of these rate policies and practices and the separate chapter on equalization³³ contain the basic argument in the Report.

A study of these sections of the Report leads to a number of conclusions. Most generally, no critical assessment is made of the theory behind regulation in Canada or what objectives it is designed to achieve. The discussion on the regulation of rates consists of an examination of a variety of rates and rate-making practices to assess their effects on equity in the freight rate structure, and to propose changes where the effects tend to create inequity.

Throughout the Report it is evident that the Commission is seeking a rate structure and rate level for the railways which will accomplish, simultaneously, two basic objectives: provide sufficient revenue to the railways to ensure their financial survival and, to permit the freest possible interchange of commodities between regions of Canada without unduly discriminating against any region or commodity. In other words, the problem of inequity cannot be resolved at the expense of the financial requirements of the railways.

³³. Report, Chapter IV, pp. 122-127.

From the point of view of economic efficiency, no assessment is made explicitly of the effects which the policy designed to achieve greater equity will have, or is likely to have on efficiency in the national transportation system. But a number of principles of rate-making are examined which are important for economic efficiency.

In a section entitled Cost of Service Principle³⁴ the Commission rejects a suggestion by the Province of British Columbia that the rate system should be based primarily on the cost-of-service rather than the value-of-service principle. It argues that a change from value of service pricing would constitute a "dangerous experiment", noting that shippers have come to depend on the present structure. Significantly, the Commission warns that a change in principle might lead to higher rates on low-valued commodities and "it is important that these rates should be kept relatively low". The Commission therefore chooses to endorse one objective of policy, that special consideration be given to primary commodities, but it does not explore the implications for any other objectives, including economic efficiency. Indeed, it does not even suggest that a choice between objectives is implied in its argument.

Although it rejects the cost of service principle as a general policy for rate regulation, the Commission does recommend that freight rates be compensatory. In the case of competitive rates,³⁵ rates also must not be lower than necessary to meet the competition. The Commission does not adopt this position because it is generally consistent with the objective of an efficient allocation of traffic among carriers, but because rates below cost create additional inequity for shippers moving

³⁴. Report, pp. 118-119.

³⁵. Ibid., pp. 83-87.

non-competitive traffic. In this case, the objectives of greater equity and improved efficiency are consistent with one another. The Commission uses similar arguments to support developmental rates,³⁶ but in this case rates must not create unjust discrimination or undue preference, in addition to being compensatory.

Not surprisingly, the Commission is able to support compensatory rates where the objectives are similar to those noted above, but can oppose this same principle in circumstances where it chooses to endorse yet another objective of public policy. This is the case with respect to the Crowsnest statutory rates, where the issue of whether rates at least cover marginal costs is not considered relevant because the rates must be maintained in the national interest. Similarly, no consideration is given to what overall effect the Maritime Freight Rates Act has on the development of the national transportation system and such objectives as economic efficiency. In both cases no assessment or mention is made of the probable effects of these policies on any other objective of national policy.

The chapter on The Maritime Freight Rates Act deals primarily with the complaint voiced by the Maritime Provinces that the advantages conferred on that territory by the Act in 1927 have been eroded by the growth of rail-truck competition in Central Canada. The terms of reference do not suggest that the Commission avoid considering the most basic question of whether the Act is an appropriate transportation policy. Several groups appearing before the Commission argued against the principle of statutory rates. The CPR in particular stated that "this type of assistance does not encourage normal or desirable economic

³⁶. Report, p. 108.

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³⁴. Report, pp. 118-119.

³⁵. Ibid., pp. 83-87.

development".³⁷ While opposing any extension or implementation of similar policies elsewhere, the CPR did not recommend the appeal of the Act because "vested interests have been built up under it which might be destroyed". But the Commission made no assessment of how such legislation may affect a variety of objectives of national transportation policy.

A specific problem with respect to efficiency is the application of the subsidy to only one carrier, the railways. A recommendation was made to the Commission that the subsidy should apply to steamship lines operating within the select territory defined by the Act. The Commission dismissed this subject, and did not study the implications of this policy on the development of other types of carriers in the protected region. It stated:

"The Act was not designed as a subsidy Act except to compensate the railways for the statutory reduction in their tolls. If the steamship companies can show that they are in need of subsidies and that the service they provide is an essential one, the course for them to adopt is to apply to the Canadian Maritime Commission. Each case will undoubtedly be considered there on its own merits. The subject is not one to be considered in this study of the working of the Maritime Freight Rates Act."³⁸

The Report similarly avoids examining the impact on the nation's transportation system of claims made by the CPR that the statutory Crowsnest Pass Rates were not compensatory, and that other shippers are subsidizing the railways for the alleged losses, resulting in a misallocation of resources.

After reviewing an extensive brief submitted by the CPR purporting to show the losses incurred on the traffic moving under the Rates, the

³⁷. Report, p. 233.

³⁸. Ibid., p. 236.

Commission concludes:

"...the determination of the question of whether or not these rates are in fact compensatory is not of essential significance to the proposals the Commission intends to make concerning their future treatment."³⁹

The proposals referred to are that no changes could be recommended in either the principle of statutory rates or in the desirability of Parliamentary control over them. That is:

"The conclusion which commends itself to the Commission is that the time has not come for Parliament to divest itself of the immediate control of these rates which it assumed in 1897... On the contrary, it would be against the national interest at this moment, in view of the uncertainties which exist in world affairs, and consequently in world market prospects, to subject this great export industry to the disturbance which the abandonment of statutory protection would undoubtedly cause."⁴⁰

The section of the Report dealing with agreed charges as a rate policy⁴¹ raises a number of key issues for efficiency, and also serves as an excellent example of the vagueness which characterizes much of the Report's discussion on efficiency matters. Once again the Commission supports the principle of compensatory rates. But the CNR argues that the trucks are transporting goods under circumstances for which they do not have an inherent advantage. They are able to do this because they can "pick and choose" traffic much more readily than the railways can, and consequently choose the high-rated goods where the largest profit can be realized. If the railways were permitted by means of the agreed

39. Report, p. 244.

40. Ibid., p. 249.

41. Ibid., pp. 88-96.

charge to offer rates at cost level, plus some profit, then "the trucks would be unable to operate beyond the limit zone within which they admittedly have an advantage".⁴²

In rejecting the railway's request for additional authority to use the agreed charge, the Commission does not consider the concept of inherent advantage. It rejects the request with expressions of fear about the possible effects of wider use of the agreed charge on the trucking industry. First, the Commission fears that competition might be stifled.

"The danger in the proposed amendment lies in the power it would give to stifle competition."⁴³

Second, the Commission fears the potential effects on the growth of the trucking industry.

"This might prevent the growth of a form of transport which may be of great value to the commerce of the country...Any weapon which might seriously endanger or bring about the elimination of the trucking industry must be guarded with close restrictions."⁴⁴

No evidence was given to support these anticipated results, and the Commission fails to clarify or comment on the issues raised by the railways. The railways did not argue that the trucking industry should be prevented from existing or indeed expanding. On the contrary, they specifically refer to the advantages enjoyed by the trucks to carry traffic under certain circumstances. They wished the Commission to comment on

⁴². Report, p. 91.

⁴³. Ibid., p. 95.

⁴⁴. Ibid., pp. 94-95.

the relationship between the use of the agreed charge as a competitive policy, and the proper role of the trucking industry as a competing mode.

Similarly, the railways did not object to close supervision to ensure that the agreed charge would not be used to destroy competition. They are asking the Commission to examine under what circumstances that competition will be beneficial to the transportation industry. They take the position that competition which is created because of distortions in the rate structure of the railways is artificial, in the sense that it does not reflect the true economic capacities of the different carriers. If therefore as a result of lowering their rates to the cost plus level, the railways eliminate truck competition, the "stifling" of competition is a desirable consequence from the point of view of economic efficiency.

In concluding this discussion on rate regulation and efficiency, it is worth noting that the Commission itself has no long-run view of how equalization will occur, or indeed which criteria should determine under what conditions rates be equalized.

This is partially evident in the discussion of the horizontal method of applying rate increases. The Commission recognizes that the railways favour this method because of its simplicity and because it is the most effective method to raise revenue where the pressures of competition from the trucking industry for some traffic exist side by side with a virtual monopoly for the railway on other traffic. The method is opposed by regions who are dependent for their well-being on the long-haul of traffic.

According to the Commission the solution to this dilemma is in the hands of the railways themselves. That is:

"It appears therefore that the answer to the question raised lies mainly with the railways themselves, since the means of removing the cause of dissatisfaction is within their own initiative...railway management in the past has often proceeded, in fixing freight rates, without sufficiently considering the interests of the community to be served, and without even showing a proper conception of the long-run interest of the railway."⁴⁵

The Report offers very vague guidelines which the railways are to observe in applying rate increases.

"The railways should make studies of traffic conditions in all their bearings and should present to the Board...proposals showing not only their maximum percentage increase requirement, but also, among other particulars, varying percentage increases on different commodities, flat, instead of percentage increases when these are more suitable, and maxima in appropriate cases in cents per 100 pounds or other unit. Special attention should be given to long haul traffic and to rates on basic (or primary) commodities. The railways should be in a position to do this especially in the light of new statistical procedures."⁴⁶

The Commission recommends that the Board of Transport Commissioners should insist that the railways approach their requests for revenue on this basis.

It is difficult to determine what principles underline these recommendations. Curiously, the Commission sees no contradiction between the railways' efforts to pursue profit-maximization on the one hand, and the proposed responsibility to decide on the relative importance of different commodities to the various regions of the country. Apart

⁴⁵. Report, p. 47.

⁴⁶. Ibid., p. 61.

from making such general references to the need for more decision-making on policy matters by the railways, the Commission does not provide specific guidelines on how the railways should treat different commodities, or what priority should be given various commodities.

"Each case must stand on its own merits; different consideration will apply under different economic conditions; and undoubtedly different considerations apply in the case of small, as compared to large, increases."⁴⁷

It is difficult to understand why the railways are cast in the role of having to establish under which conditions the objective of an equitable rate structure will be achieved. While it is suggested that the Board of Transport Commissioners will supervise the move toward such a rate structure, it should be recalled that the existing inequity in the rate structure is in no small measure due to the profit-maximizing efforts of the railways in the first place.

Similarly, the chapter devoted to a discussion of the principle of equalization does not provide specific criteria. The Commission offers the following observation as evidence that greater equality in the rate structure is in the public interest.

"It appears that Canada has reached a stage in its development when former methods of making regional rates must give way to a uniform rate structure that, as far as may be possible, will treat all citizens, localities, districts and regions alike."⁴⁸

The Commission recommends that equalization be implemented as a general principle only, stating that "it is difficult to conceive of an unqualified statutory rule for equalization".⁴⁹

⁴⁷. Report, p. 62.

⁴⁸. Ibid., p. 127.

⁴⁹. Ibid., p. 125.

The exceptions named by the Commission offer a partial answer to which criteria should apply for equalization. Statutory rates are exempted for reasons discussed above. International rates and rates on export and import traffic are exempt because of their critical relationship to rates in the U.S. Competitive rates and agreed charges are exempt because competition is a legitimate basis for differential treatment according to the Commission.

Significantly, no mention is made of whether differences in operating costs, due to density of traffic, cost of supplies, differences in terrain or other factors, would justify differences in rates in various localities.

Here as elsewhere the Commission does not clarify under what conditions rates may be equalized, and if they are, what the implications are likely to be. The Commission simply refers to the need for a great deal of study by both the Board and the railways. The effects on other carriers are completely ignored.

"The objective of equalization is something which can only be attained after considerable study by the Board and by the railways. Undoubtedly many serious problems are involved, for example the effect that the proposals may have on railway revenues, on established industries and on trade and market patterns."⁵⁰

It is apparent that the Commission views the establishment of one uniform equalized class rate scale and equalized commodity mileage scales throughout Canada as the beginning of a gradual development toward a uniform rate structure. Other rates will be equalized when the situation warrants.

50. Report, p. 125.

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50. Report, p. 125.

"With the uniform equalized class and commodity scales so constructed and put into effect within a reasonable period it may be possible to use these scales as a pattern for the elimination of the several other anomalies which exist in the numerous special freight tariffs between specified points. It may be expected that such special freight tariffs will be brought into uniformity in so far as this can be accomplished having regard to all proper interests. It appears desirable that a beginning should be made with the uniform scales. Other adjustments may properly follow as time and conditions demonstrate to what extent the many specific rates now existing can be made more uniform than they are today."⁵¹

Regulation of Entry and Exit

The views of the Commission with respect to the regulation over entry of new firms into existing markets, the expansion of existing firms into new markets, and the abandonment of existing services, are all prompted by comments contained in briefs presented before the Commission. No systematic evaluation or study is made of this subject. The largest part of this analysis is contained in the section Proposed Railway Expansion and Matters Incidental Thereto.⁵²

The discussion on expansion is confined to the issue of building new railway lines. The Commission argues that there still exists opportunities for railway expansion in Canada, particularly in northern regions. With respect to the conditions which would justify such expansion, the Commission concludes:

"The day of illconceived and therefore excessive construction seems to have gone by, and our people can feel reasonably assured that from now on no railway ventures will be undertaken excepting

51. Report, p. 127.

52. Ibid., pp. 130-135.

after thorough investigation of each project and always with due regard to the financial commitments involved."⁵³

With respect to the abandonment of railway services, the Commission again offers a very general comment.

"Our railways should be allowed to practice... economies in cases where operations are shown to have become substantially unnecessary or to be definitely unprofitable, especially, of course, when it is shown that reasonable service can be assured by other agencies."⁵⁴

Anticipating probable future developments within the transport industry and between transport and other industry in general, the Commission urges a change in the current unfavourable attitude among the public toward railway abandonment. Referring to the experience in the United States, the Commission argues that the future development of the Canadian economy will require, if the railways are to remain competitive, a more flexible attitude toward abandonment, which will be needed to cope with changing competitive circumstances in the transport sector, the cessation or relocation of industry, the exhaustion of natural resources and so on.

Two final references on this subject matter appear in the Report. The first is a simple reiteration of the policy of the Air Transport Board on permitting new carriers to compete on existing routes. This was noted earlier. The other reference is made in respect to the low barriers of entry in the trucking industry. But no discussion follows on the implications of this market characteristic for the trucking industry or other modes of transport.

53. Report, p. 131.

54. Ibid., p. 135.

"...the trucker who offers his truck for hire... has not only competition from other forms of transport, but has many competitors in his own field, and from private truckers as well. If the prices for his services is too high, persons and industries can, with comparative ease and small cash outlay, purchase their own trucks."⁵⁵

Coordination

In Chapter XVII entitled National Transportation Policy, the Commission examines the subject of coordination in national transportation policy. It was noted earlier that it recommends the formation of a Central Authority to combine the functions of the Board of Transport Commissioners, the Air Transport Board, and the Canadian Maritime Commission. A few general comments should precede a discussion of this proposal.

First, the Commission explicitly recognizes that effective co-ordination of all agencies of transportation is prevented because of provincial jurisdiction over intra-provincial trucking and highway construction. Furthermore, the Report notes that only the province of Saskatchewan would agree (and on certain conditions) to turn over to the federal government authority for regulating intra-provincial trucking. The Commission expresses "hope that the provinces will some day agree to co-operate with the Federal authority in the carrying out of a common policy of co-ordination".⁵⁶

Second, the Commission emphasizes the important of having a well qualified and adequate research staff composed of experts in the many fields of work related to transportation. The Commission argues that "staff efficiency and the proper performance of duties" will be enhanced

⁵⁵. Report, p. 94.

⁵⁶. Ibid., p. 279.

under a unified structure.⁵⁷

The Commission argues that a unified decision making structure is required to assess the impact of decisions made by the regulatory authorities with respect to the different carriers. This is because the different types of carriers, while separate, are very much inter-related in providing transportation services. No matter what the objectives of regulation may be, this characteristic of the industry requires that the effect on other types of carriers, of decisions by regulatory authorities made with respect to one type of carrier, be examined and evaluated. The Commission suggests that unifying the functions of the separate regulatory boards is the best way to achieve a coordinated, efficient approach to decision making.

The objectives which the unified regulatory authority will attempt to achieve is a separate matter entirely from the need to improve the efficiency of the decision-making structure. The latter is desirable regardless of the objectives to be pursued in regulation. The Commission does not clearly distinguish these two issues, but blends them together and tends to confuse them. It recommends that the objective of regulation under the Central Authority be, as noted earlier, the development of adequate and efficient transportation services. Regulation of all modes should have the "common purpose" of "enabling each agency to perform its service advantageously and properly as part of a national transportation structure".⁵⁸

To state this objective in terms of having each agency provide the services for which it has an inherent advantage and in such a manner that

57. Report, p. 280.

58. Ibid., p. 280.

carriers serve "collectively" to meet the needs of the country, would seem to indicate that the Commission understands coordination to mean economic efficiency in the national transportation system, and not merely coordination of the efforts of the regulatory authorities. In fact, the discussion in the Report tends to support the latter interpretation, for the following reasons.

It may be true that economic efficiency is declared to be the objective of regulation. But it appears that the statement describing the objective or "common purpose" of regulation was included only to refer to another of many objectives of regulation in national policy, and it has nothing to do with the discussion on coordination.⁵⁹ That is, the coordination to which the Commission refers is not identical to economic efficiency, but is instead conceived in terms of unifying or coordinating the work of the regulatory authorities.

This conclusion is supported by additional evidence in the chapter and elsewhere. It is evident in the brief recounting of the history of coordination of transport which the Commission gives.⁶⁰ The concept of coordination used there is a legal one, referring to whether Parliament gave jurisdiction to regulate the carriers to one or more Boards. Thus, "the trend of legislation in recent years has been away from integration

59. It is useful to recall the point made earlier in this Chapter that the Commission refers to several objectives of regulation throughout the Report, but at no time does it assess the relative importance of these objectives, nor does it suggest how one affects, or is related to another. Because of this, and in view of the fact that this first explicit reference to efficiency appears at the very end of the Report, it is tempting to conclude that the Commission invoked the objective of efficiency to justify establishing the Central Authority.

60. Report, pp. 276-277.

and coordination: so that now there are three bodies instead of one regulating transportation".⁶¹

A more important indication that the Commission views coordination in "decision-making" terms is the absence of any mention of how other forms of public intervention such as subsidy and public investment should be treated in order to achieve coordination in national transportation. An example will make this clear.

The Report suggests elsewhere that the Canadian Maritime Commission, one component of the proposed Central Authority, is the appropriate body to consult for those groups seeking subsidies in the water transport industry.⁶² On the other hand, the Commission implies that the Air Transport Board, another component of the proposed Central Authority, is not responsible for subsidies in the air carrier industry.⁶³ Finally, the Commission rejects the idea that the Board of Transport Commissioners should be responsible for recommending subsidies for the railway industry, claiming such a step would create an "intolerable" relationship between the Board and the Government.⁶⁴

These conclusions indicate that the Commission proposes a Central Authority to achieve economic efficiency in transportation, but this authority will not have control over subsidy. Presumably, decisions on public investment policy are not within its jurisdiction either.

It must be concluded that the Commission in referring to coordination in transportation, does not mean coordination in the sense discussed in Chapter 1 of this study.

61. Report, p. 277.

62. *Ibid.*, p. 236.

63. *Ibid.*, p. 261.

64. *Ibid.*, p. 158.

Subsidy

A similar pattern to that found in the treatment of competition, regulation and coordination is evident in the Commission's views on subsidy. That is, economic efficiency is not an explicit objective for public subsidization policy, nor do the recommendations made indicate an awareness on the part of the Commission that the objectives which it does choose to support are in any sense related to economic efficiency, and indeed may be inconsistent with it.

The previous discussion on user fees and various forms of cross-subsidization in the rate structure demonstrate very clearly that the Commission was either unaware of (or at least would not recognize) the effect of such indirect subsidy on economic efficiency, or was not concerned with the effects, and chose to examine in isolation the objective it considers a higher priority.

Similarly, the one chapter devoted to an assessment of a problem which requires a form of direct subsidy makes no mention of economic efficiency and, in fact, the recommendation made is likely inconsistent with that objective.⁶⁵

The proposal made is the familiar "bridge subsidy" which is designed to "lessen the burden of freight rates for the Western Provinces whose geographical location necessitates a haul of traffic inwards and outwards over a long stretch of unproductive or only partly productive territory".⁶⁶ Thus, the objective of the subsidy is to mitigate the effects of distance in the rate structure. The Report recommends that the Federal Government subsidize the cost of maintaining the so-called 'bridge', that portion of trackage on the CPR and CNR between Sudbury and Thunderbay. The subsidy will have the effect of lowering freight rates, particularly on traffic

65. Report, Chapter XI, pp. 253-254.

66. Ibid., p. 253.

moving from Western Canada to Central Canada.

The policy of tying the subsidy to the specific cost of maintaining a given mileage of track appears consistent with the principles discussed in Chapter 1, but the method of applying the subsidy (to reduce rail rates) does not. That is, because the subsidy is applied only to rail rates, an inefficient allocation of traffic and resources among the competing modes will likely result. This problem is not considered by the Commission in its explanation of the subsidy proposal. However, it may be that this subsidy will have very little impact on efficiency because it is supporting long haul traffic for which the railways have cost advantages over the other carriers.

The discussion on subsidy provides another example of the apparent confusion which the Commission displays when commenting on national policy objectives. In one instance, the Commission recommends the implementation of the "bridge" subsidy and justifies this on the basis of its interpretation of what constitutes the national interest. That is:

"It is the existence of this necessary link between Canada's two vast areas that must be recognized. It is called for, not only by the requirements of the exchange of goods for commercial purposes, but also by those of our national defence structure. The problem presented is that of maintaining this link so long at least as it does not provide sufficient revenue for its own maintenance. This problem concerns the whole country and not only its western portion, and the responsibility for its solution should be assumed by the nation as, for instance, in the case of the maintenance of our canal system."⁶⁷

67. Report, p. 253.

In another section of the Report however, the Commission assumes an entirely different attitude in respect to recommending subsidies to promote certain public policy objectives. It was suggested that the Federal Government provide subsidies to the aircraft industry for research and development, and to assist carriers to establish services in certain regions of Canada.⁶⁸ The Commission responds by arguing that these are matters of "either national or government policy upon which no useful recommendation can be made".⁶⁹ Again no reason is apparent why the Commission chooses to endorse certain objectives of national policy and not others.

Private and Public Ownership

The Commission examines the relationship between public and private ownership in transportation and the objective of economic efficiency in a reasonably explicit manner.

The analysis presented in the Report on this subject is confined first, to a brief examination of a proposal for amalgamation of Canada's two major railway systems under public ownership; and second, to an examination of the capital structure of the CNR and its relationship to the establishment of a satisfactory rate policy for the two railway systems.

It would be fair to summarize the Commission's views on this subject with the following statement:

"It is part of the National Transportation Policy that the two great systems shall have the opportunity to operate side by side, in order to provide the

⁶⁸. Report, p. 260.

⁶⁹. Ibid., p. 261.

requisite services to the country and its people and at the same time to serve as a check and a balance on each other, without destroying the opportunity of the privately-owned road to live and progress and to earn a fair revenue."⁷⁰

The Commission offers four basic reasons for opposing a proposal for amalgamation under public ownership of the CNR and the CPR.

First, the Commission argues that if the Government of the day had wanted the subject considered, it would have been included in the terms of reference.

Second, the Commission agrees with the conclusion reached on this subject by the Duff Commission in 1932 that too much power would be placed in the hands of management in an area so vital to the national interest.

Third, the Commission further endorses the Duff Commission's reasoning that "the management of so large a system...would become unwieldy and necessitate segregation".⁷¹

Finally, the Commission concludes that the beneficial results of a state monopoly in the railroad industry, which have been realized in some European countries, would not necessarily be secured in a country such as Canada, where the economic, political and geographic circumstances, such as the divided political jurisdiction over the different agencies of transport, the vast geographical areas, the relationship of population of those territories and so on, vary considerably from those found in Europe.

Thus, the likelihood of managerial inefficiency is an important reason to oppose such a merger. Further, the Commission is satisfied

70. Report, p. 276.

71. Ibid., p. 129.

that two railway systems have been operated efficiently as independent enterprises.⁷²

Although rejecting amalgamation of the two railway systems, and for reasons which appear consistent with efficiency criteria, the Commission does support in principle public ownership as a legitimate policy tool for governments. Nowhere does it suggest that the two primary examples of the application of that policy, the CNR and the canal system in Central Canada, are or ever were inconsistent with the objective of economic efficiency.

The Report notes several reasons why public ownership may be preferred to private ownership. For example, public ownership may be a necessity, as in the case of the CNR, when private enterprise is no longer able to provide services which are considered necessary in the national interest.⁷³ Furthermore, the national interest may require the construction of transportation facilities at a time when market factors such as density of traffic would make such investments by the private sector most unattractive. Such was the case with the canal system built in Canada, and the Trans-Canada Airlines.⁷⁴

In Chapter VI of the Report, the Commission examines proposals for a recapitalization of the CNR; specifically, in accordance with the terms of reference, the advisability or otherwise of establishing and maintaining the fixed charges of the CNR on a basis comparable to other major railways in North America. In essence, the Commission is asked to

72. Report, p. 275.

73. Ibid., p. 275.

74. Ibid., p. 294.

consider what changes in the capital structure of the CNR would be appropriate, given that the CNR occupies a unique place in North America as a publicly owned corporation which plays a special role in the public interest, and whose financial policies are therefore dramatically different from the privately owned CPR, with whom it must compete. It is important to determine how these particular circumstances may affect economic efficiency.

The CNR argues that the high fixed charges, which arose in large part from the burden of debt taken over when the Company was organized and which the Company estimates to be excessive by some 1.5 billion dollars, have contributed to creating a situation where the "financial results of the Canadian National distort the true efficiency with which the System's operations are conducted".⁷⁵ At the same time, the efficiency of operations has been adversely affected because the complex financial problems of the CNR are not properly understood by the general public, which blames management "for the large deficits which are inescapable under existing circumstances".⁷⁶ The wide acceptance of such a view by the public is "injurious to the morale of officers and employees alike".

The railway suggests that such problems could be overcome if the capital structure and especially the fixed charges reflected its commercial operations and its commercial potential. It recommends a series of proposals which would have the effect of removing "from railway to public accounts the extent to which commercial considerations

75. Report, p. 184.

76. Ibid., p. 190.

have been subordinated to considerations of broad national policy".⁷⁷
The specific content of the proposals is not important for our purposes.
What is relevant is the response made by the Commission.

First, the Commission is not impressed by the argument that the critical attitude of the public seriously affects efficiency by lowering the morale of officers and employees. As evidence, the Commission points out that the CNR made no attempt to "measure in dollars and cents any real savings which might result" from an improvement in the morale.⁷⁸
In any case, these psychological factors "do not in fact result in any financial embarrassment to the Company or affect its credit, as deficits are paid by the Government".⁷⁹

These objections to arguments concerning the importance of psychological factors do not address the essential point made by the railway. First, it is virtually impossible to put a precise figure on the contribution of attitudes as a factor affecting efficiency and, second, the fact that the Government absorbs deficits does not suggest the deficits might not be lower with an improvement in attitudes. However, a conclusion on this point is difficult because the Commission appears satisfied that the CNR is managed efficiently.⁸⁰

The Commission rejects as neither "practical nor desirable" the policy recommendation that the fixed charges of the CNR reflect only commercial considerations, and that the Federal Government assume the financial responsibilities for capital costs and interest payments on projects built for reasons of national interest.

77. Report, p. 188.

78. *Ibid.*, p. 190.

79. *Ibid.*, p. 194.

80. *Ibid.*, p. 195.

The policy is deemed impractical because it would be virtually impossible to segregate in the operating accounts of the company on existing services those charges which result from broad national policy from those which are commercially motivated.⁸¹ However, in circumstances where a reasonably precise estimate can be made of the capital expenditures and operating costs needed to provide a service in the public interest, the Commission recommends that the Federal Government finance the capital expenditures and absorb the operating losses until either the service becomes profitable, or until the losses are such that they can be "absorbed in the Canadian National accounts without unduly affecting the overall system results".⁸² It is worth noting that in this instance, in contrast to the earlier discussion, the Commission rejects any form of cross-subsidization, but offers no reasons for its decision.

Furthermore, it is not possible to establish the fixed charges of the CNR on a commercial basis in order to compare its operations with those of privately-owned railways, because the circumstances which determine financial policy for a private company are radically different from those confronting the CNR. That is, the CNR does not have to worry about earning sufficient profit to pay "reasonable dividends to its shareholders and set aside reserves for a rainy day", after paying income taxes.⁸³ The CNR is exempt from paying income tax and it does not face the credit problems associated with raising capital in the open money markets.

81. Report, p. 190.

82. Ibid., 198.

83. Ibid., 194.

A policy of establishing comparability with the private company is also undesirable, because the CNR is a "public utility owned and operated by the Government" whose aims and objects will inevitably reflect considerations of public policy and the national interest. The Commission specifically points to the statement of the CNR in this respect, that it is an enterprise operating "in the national interest on a basis which cannot be justified commercially, very extensive lines of railway required for strategic, colonization, agricultural and development reasons".⁸⁴ Comparability is undesirable for the additional reason that it poses a threat to the very survival of the private companies, which could arise if the fixed charges of the CNR were established at a low level so that the appearance of excessive earnings gave rise to "unwarranted demands for lower freight rates".⁸⁵

In conclusion, it may be said that the Commission recognizes a special contribution which public enterprise can make, and which in fact it has made, to the nation's transportation system. The Commission argues that in the particular context of the country's transportation requirements, a policy of permitting the privately-owned CPR to exist side by side with the publicly-owned CNR and to compete with it is a beneficial policy, and one which can continue without sacrificing carrier efficiency.

"There appears to be no reason to recommend any change in a transportation policy which has provided the Canadian people with efficient rail transportation services through the medium of a private company competing with a government-owned railway."⁸⁶

⁸⁴. Report, p. 188.

⁸⁵. Ibid., p. 194.

⁸⁶. Ibid., p. 199.

Chapter 3

Royal Commission on Transportation

The Royal Commission on Transportation was appointed by the Diefenbaker Government on May 13, 1959 by Order-in-Council P.C. 1959-577. The Commission was chaired by M.A. MacPherson and consisted of six members.

The appointment of the Royal Commission was prompted by a series of problems which faced the two major rail systems. These problems were very similar to those which precipitated the appointment of the Turgeon Commission. The basic problem once again was that the railways were facing a financial crisis due to a cost-revenue squeeze. The Korean War caused a sharp increase in the cost of labour and supplies, and business recessions in 1954 and 1957 reduced railway revenues below expectations. The railways therefore applied for several general rate increases.¹

The requirement that statutory rates not be increased combined with the growing difficulty of finding traffic which could afford higher rates (either for market-competitive or carrier-competitive reasons) meant that each rate increase was applied to a smaller base of traffic.² Once again the regions outside Central Canada argued that the increases were applied inequitably, resulting in a continual deterioration

1. A.W. Currie, Canadian Transportation Economics (University of Toronto Press, 1967), p. 16.

2. Fourteen general rate increases between 1948 and 1958 permitted a 155 percent increase in rates, but the increases actually achieved were about 55 percent. See Currie, p. 17.

of their economic position with respect to Central Canada.

In early 1959 when the railways applied for a further increase of 12 percent in the rate level, the Diefenbaker Government appointed the Royal Commission. In addition, no further increases in rates were to be granted until the Commission reported. To relieve some of the pressure of the higher rates already approved, the Government passed the Freight Rate Reductions Act, which reduced an approved rate increase of 17 percent in December, 1958, to 8 percent by providing the railways with a \$20 million subsidy.

In December 1960 the Government was forced to pass legislation prohibiting any strike by railway labour until after May 15, 1961. A dispute over wages had developed that summer, and the Government did not want to approve further rate increases before receiving the Commission's Report. Although the first volume was available before the strike deadline, the Government decided it could not act without the recommendations in the second volume, and it increased from \$20 million to \$70 million the subsidy approved earlier, when the railways agreed to the wage demands of the unions before a scheduled strike on May 16th.

Terms of Reference

The terms of reference instruct the Commission to examine the problems facing railway transportation, and to find a solution to remove or alleviate the inequities in the freight rate structure. Without restricting the generality of this instruction, the Commission is directed to study and report upon the following:

- (a) inequities in the freight rate structure, their incidence upon the various regions of Canada and the legislative and other changes that can and should be made, in furtherance of national economic policy, to remove or alleviate such inequities;

- (b) the obligations and limitations imposed upon railways by law for reasons of public policy, and what can and should be done to ensure a more equitable distribution of any burden which may be found to result therefrom;
- (c) the possibilities of achieving more economical and efficient railway transportation;
- (d) whether, and to what extent, the Railway Act should specify what assets and earnings of railway companies in businesses and investments other than railways should be taken into account in establishing freight rates; and
- (e) such other related matters as the Commissioners consider pertinent or relevant to the specific or general scope of the inquiry.

The scope of the Commission was not to extend to the performance of functions which under the Railway Act are within the exclusive jurisdiction of the Board of Transport Commissioners.

Economic Efficiency and the Terms of Reference

It is clear from the terms of reference that the scope of the inquiry is intended to be rather narrow and quite specific. First, only one carrier, the railways, is mentioned specifically. Second, the main emphasis is placed upon the objective of removing inequity in the railway freight rate structure. The Commission is asked to identify the origins of this inequity, and particularly where it results from legal obligations imposed upon the railways for public policy reasons. The Commission is also asked to specify the incidence of the inequity in the various regions of Canada.

The Commission is asked to examine another aspect of freight rates - whether and to what extent railways should be permitted to use non-railway revenues in establishing freight rates.

The only instruction which does not refer specifically to railway freight rates is the one asking for a study of how to improve the efficiency

of railway transportation. No reason is immediately apparent why this is included. It might be assumed that the Government saw a direct relationship between the inequity problem and inefficiency in rail transportation. The argument might be that improved efficiency could reduce the overall level of rates, thus making the railways more competitive and less dependent upon federal subsidies. The improved revenue position would reduce the pressure to apply rate increases to an ever-narrower base of traffic, and thus retard the development of greater inequity in the rate structure.

Whatever the argument may be, it is worth noting that only the railways are singled out for a study of efficiency. It cannot therefore be assumed that the intention was to examine economic efficiency in the national transportation system, or as an objective of national transportation policy. From a study of the terms of reference and a knowledge of the events which preceded the appointment of the Commission, it would appear that the central concern of the Government was the problem of inequity in the freight rate structure. It is left to the Commission to find solutions to this problem.

The Commission's Report consists of three volumes of which the first two form the essential part. Volume I, released on March 1961, attempts to examine the "structural nature" of the transportation system in order to define the basic problems for public policy in transportation. These problems are in part the product of law and public policy, and their solution will "involve considerable adjustments in the Canadian transportation scene".

Within this framework, Volume II, released in December 1961, examines the relationship between transportation and certain aspects of regional

economic development including the effects of inequity in the rate structure. The Commission develops certain principles which it believes should apply where transportation is used as an instrument for regional development.

Volume III is a collection of special studies intended to assist the Commission with its investigation.

Comparison of Turgeon and MacPherson Commissions

It is useful to attempt a comparison of the Turgeon and MacPherson Commission for many reasons. From the point of view of the objective of this study, it will be helpful to make an assessment of the differences in approach adopted by the Commissions. In particular, while it is true that both Commissions were most concerned with the problem of inequity in the railway freight rate structure, the MacPherson Commission chooses to examine this problem from a much different perspective than the Turgeon Commission, with important implications for the study of economic efficiency.

It is important to note at the outset that the terms of reference, while similar in some respects, are not identical for both Commissions. It appears that the terms of reference of the MacPherson Commission are more restricted than those of the Turgeon Commission. It is particularly noteworthy that the Turgeon Commission was not directed to advise upon the implementation of any specific objective of national transportation policy, whereas the MacPherson Commission is so instructed. That is, the MacPherson Commission is asked to examine "problems relating to railway transportation in Canada and the possibility of removing or alleviating inequities in the freight rate structure". In contrast, the

Turgeon Commission was to examine "all questions of economic policy within the jurisdiction of Parliament arising out of the operation and maintenance of national transportation".

In spite of these instructions, it is the MacPherson Commission which in fact undertakes an overall assessment of national transportation policy. In contrast to the Turgeon Commission, the MacPherson Commission identifies the various objectives of national transportation policy and attempts to assess their relative importance in contemporary conditions. More significantly, the Commission recognizes that these objectives may be incompatible with one another, and choices must be made among objectives. The Commission notes that competition and the various forms of public intervention are intimately related, and policy in these areas may work at cross-purposes with respect to a given set of objectives. Finally, the Commission recognizes that the carriers themselves and the services they provide are inter-related, and that policies with respect to one carrier must be examined for the implications for other carriers.

This explicit recognition of the dynamic relation between the market structure of the carriers, the objectives of public policy, and the tools of public intervention is the single most important difference in approach between the two Commissions. One result of this difference is that the MacPherson Commission is a more coherent study, which is more consistent throughout. The Report does not display the confusion which was evident in the Turgeon Report concerning the interpretation of national policy, noted earlier. Nor does the MacPherson Commission rely upon complaints by interest groups to define the scope of certain problems, as the Turgeon Commission did.

In conclusion, the Turgeon Commission tended to examine the issues

with a legalistic approach, which emphasized a literal and narrow interpretation of the terms of reference, statutory definitions of the public interest, an excessive preoccupation with the function of bodies such as Parliament as opposed to the content of their policy, a concern for the validity of complaints in terms of historical precedent rather than a search for the causes of the complaints, and so on. In contrast, the MacPherson Commission adopts a highly analytical approach with particular emphasis on specifying the objectives of public policy and how public intervention may be used to achieve them.

Statement of the Central Theme of the Report

It is useful for this study of economic efficiency to begin with an overview of the content of the MacPherson Commission Report. It is helpful to establish the limitations of the general discussion and to introduce in particular the subject of economic efficiency.

"We have reached...the era of competitive co-existence in transportation in Canada and it is the task of the public, and of the industry itself, to ensure that present and future policy is formulated in the light of this development."³

This statement expresses one of the central conclusions in the Report. The Commission argues that effective competition has developed in the national transportation system, particularly since the Korean War, and traditional public and industry policies based on the concept of railway monopoly are no longer appropriate. In the competitive environment, adherence to these policies creates inequity and inefficiency

3. Royal Commission on Transportation (Queen's Printer, Ottawa, 1961), I, p. 74.

on a major scale.

The solution to the present problems, including the freight rate inequity problem, requires major adjustments in the national transportation system. Two things must change simultaneously. First, the railways must be permitted to assume a place in the national transportation system based upon the inherent advantages of the mode. This means in part removing any responsibilities which the railways may have to provide services in the national interest which are unremunerative, and for which proper compensation is not paid by the federal government. Second, a distinction must be made between national transportation policy and national policy which seeks to utilize transportation to achieve its objectives. The objective of national transportation policy should be to achieve an efficient national transportation system. The objectives of national policy may include regional economic development, national unity, freight rate equalization and so on. Many of these objectives are incompatible with the achievement of an efficient transportation system unless specific steps are taken to prevent distortions in the competitive relations among the carriers when transportation is used to achieve these objectives.

It will be useful to develop these ideas in greater detail before discussing the concept of efficiency presented here.

The Development of Effective Competition

The growth of competition in the Canadian transportation system was the result of the complex interaction of many factors, but primarily it was due to the development of new technology, the changing composition of demand for transportation services, the pursuit of inappropriate

policies by the railways, the failure of public policy to respond to changes which implied a break from the traditional role for the railways, stubborn public attitudes, and certain economic realities, such as the shortage of materials in the post World War II period.

During the initial stages of Canadian development, a number of circumstances existed which tended to create and reinforce a monopoly position for the railways. The technological superiority of the railway emerged at the very moment when public authorities were anxious to establish a strong east-west link which would ensure the viability of the Canadian Union. The railways, well suited for the task, found strong public encouragement in the form of various land grants and subsidies for establishing their facilities throughout the country. While this dependence on the railway led the public to demand effective control in the form of regulation, governmental assistance meant that rates were lower, and the facilities made available to more areas in a shorter time, than would otherwise have been possible. This strong monopoly position enabled the railways to function effectively and to accept the obligations in the form of rate policies and conditions of service imposed upon them for reasons of a public interest nature.

This strong monopoly position was also reflected in the company policies, particularly rate policy. The value-of-service pricing system became the principal rate policy. Rates on low value bulk commodities were kept down to that level which made their shipment profitable (although costly to the railways), while rates on high valued products were artificially raised to meet the revenue requirements of the railways. This provided a larger volume of traffic for the railways and, to the extent that the rates on low valued goods covered more than just out-of-pocket costs, it

meant that rates on high valued goods were lower than they would otherwise have been.

The point is that while this value-of-service pricing system may have at other times and in other circumstances been judged unjust and unduly discriminatory, it was appropriate for the economic circumstances of the day - the development of primary production. The needs of the railways (to maximize profit) and the country as a whole (the objectives of national policy) reinforced one another. The Commission states:

"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 returns - and if there were certain shippers who questioned the reasonableness of the rate structure there was, in the transportation environment of the day, very little they could do about it."⁴

Thus while the technological superiority of the railway provided an opportunity to exercise a monopoly function, the economic and political needs of the country at the time made that opportunity a reality.

A number of factors appeared during the second quarter of the twentieth century on both the supply and demand side of the transportation function which caused a change in this situation.

On the demand side, there began to occur a shift in the Canadian industrial structure with the rapid growth of secondary manufacturing relative to primary production. This shift in the industrial structure had several implications for the transportation function. It meant an

⁴. Royal Commission, I, p. 5.

"increased demand for specialized transportation services", a greater "emphasis upon the concept of total costs of distribution rather than simply line-haul rates", and it meant that "short-haul rather than long-haul movement became characteristic of (the) transportation requirements".⁵ The railways' plant and service capabilities were not entirely suited to the new composition of demand.

On the supply side, various technological advances - initially in the trucking industry but eventually in the fields of aviation, the motor bus and the pipeline - encouraged by such factors as the provision of facilities at government expense and a rapidly growing manufacturing industry, made possible a growing degree of competition in the transportation market.

But the growth of the alternative forms of transport did not result simply from improvements in technology which responded to the need for specialization in the manufacturing industry. A number of circumstances in the post World War II Canadian economy made adjustment for the railways to the new industrial and technological environment difficult. The war effort put considerable strain on the railway facilities, and shortages of materials and rising costs in the post-war period made the necessary rehabilitation program very expensive. In addition, the railways were subjected to a much more comprehensive system of regulation than their principal competitors the trucks. Management did not have the freedom they needed to meet the competitive challenge. Finally, major adjustments in plant capacity, necessitated in part by

5. Royal Commission, I, pp. 6-7.

the growth of competition, were hampered by both federal regulatory requirements and by public pressure for the retention of unprofitable services.

Effects of the Growth of Competition

The effects of this growth of competition were varied and numerous. The growth of the competitive environment made evident the possibility of conflict between commercial and national policy considerations in Canadian railway economics.

"The fact was, of course, that during the monopoly era the railway system had grown up in response to both commercial and national policy considerations and when the advent of competitive conditions revealed that in many cases there was a serious element of conflict between these two factors, incompatibility was not accepted as sufficient grounds for their separation."⁶

The transportation structure became more broadly based, more efficient (the cost of the transportation function as a percentage of the GNP declined) and more flexible. This increased diversification and flexibility effected a fundamental change in the relationship between the transportation structure and the industrial structure. The advent of a specialized transportation market made possible a wider range of production and distribution methods in industry than was possible in the railway-monopoly era. Benefits, in the form of lower rates and better service, flowed to the users of transportation and to the country as a whole.

In so far as the railways themselves were concerned, the growth of competition had both positive and negative effects. On the positive

⁶. Royal Commission, I, p. 11.

side, the railways benefited by having to improve efficiency and develop technology.

On the negative side, the revenue requirements of the railways were placed in jeopardy because the monopoly pricing policies of the railways are inappropriate in a competitive environment. The response of the railways has been to advocate horizontal rate increases but, as noted elsewhere, this is a self-defeating process.⁷

The Commission is critical of railway management on this point, arguing that the railways did not need to lose so much of the valuable high-rated commodity business in view of the continued importance of the cost of the line-haul movement for which they enjoy a considerable comparative advantage. A more cost-oriented pricing policy was called for:

"...the railway's continued adherence to this principle of rate-making in the substantially different circumstances which have existed for the past ten years has prevented them from making the most of their inherent cost advantages. To the extent that this has happened, it has resulted in an uneconomic diversion of traffic to competing carriers - with adverse consequences for the railways and for the transportation system as a whole."⁸

Thus, an inefficient allocation of traffic among modes is identified as one of the effects of the growth of competition.

7. "In a competitive environment, 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. As it is used it does not produce the necessary revenues on any basis of equity, and it encourages the erosion of traffic or the spread of competition into those commodities and for those hauls which could remain with the railways, if an unbalanced application of cost increases could be avoided." Royal Commission, I, p. 70.

8. Ibid., I, p. 14.

The device of horizontal rate increases combined with the uneven regional growth of competition has produced geographical discrimination in the rate structure, against those users of services in regions where competition has been least pervasive. The result has been increasing inequity and a disruption of the regional pattern of relative transportation costs. Geographical discrimination has replaced discrimination on the basis of commodity value with the growth of competition. While in the monopoly era the notion of cross-subsidization worked reasonably well to mitigate the effects of distance and other geographic and economic factors, these problems, under the pressure of competition which has been uneven regionally, are being aggravated by that rate structure and the horizontal method of applying increases.

The Commission notes two factors which have had the effect of relieving somewhat these adverse consequences on some regions in Canada. The first is the increasing strength of competition from the trucking industry which has helped to prevent monopoly pricing by the railways. The second is the granting of regional financial assistance, such as the Maritime Freight Rates Act, the "bridge" subsidy, and the Freight Rates Reduction Act. The Commission warns however that the form in which such financial assistance has been granted may be detrimental to the development of the national transportation system.

"Measures such as these, while they help to alleviate freight rate inequities, cannot by themselves solve the underlying problem. Moreover, in the form in which they have been applied, they may tend to distort the competitive market in transportation with resultant adverse effects upon the transportation system as a whole."⁹

9. Royal Commission, I, p. 21.

Implications of the Growth of Competition

The remainder of the Report is devoted to an assessment of the implications of the growth of effective competition. More precisely, the Report examines the implications for the two most important negative consequences of this change, namely inequity in the freight rate structure and inefficiency in the national transportation system. According to the Commission, the solution to one requires the solution of the other. That is, the Commission argues that the freight rate inequity problem is essentially a projection of the financial dilemma of the railways, and this dilemma will only be solved if the railways can "unleash" their potential competitive strength by fully exploiting their inherent cost and service advantages. The Commission argues that the railways have been unable to achieve their full competitive power because they continue to assume a burden which the Commission calls "a legacy from the monopolistic environment of the past".¹⁰ This burden "derives in part from public policy and in part from policies pursued by the railway industry".¹¹

As far as public policy is concerned, the Commission identifies four principle areas where, either as a result of tradition, law or public policy, the railways have had to assume responsibilities which has prevented them from exploiting their competitive advantages. These are the obligation to maintain excessive plant (primarily uneconomic branch line services), the maintenance of unprofitable passenger services, the obligation to carry grain at statutory (and unremunerative) rates, and the obligation to provide free transportation. The Commission argues

10. Royal Commission, I, p. 28.

11. Ibid., I, p. 28.

that the railways must support these costly services with revenues secured from other traffic, and this form of cross-subsidization prevents the railways from adopting rate and service policies which will reflect their cost characteristics. The result is a substantial misallocation of traffic among carriers, increased inefficiency, and inequity in the freight rate structure. The Commission recommends that the nation as a whole assume responsibility for the cost of these services if they are necessary in the public interest.

The Commission is critical of railway management as well as public policy because, while a certain amount of value-of-service pricing was necessary to cope with the burdens of public policy requirements, a good deal of scope still existed for a more cost-oriented approach to rate-making. Management is criticized for having "an excessive preoccupation... with the problem of increasing the level of revenues obtainable from available traffic".¹²

The advent of effective competition requires a basic change in the methods of using carriers to further public policy objectives. This is true not only for circumstances such as the one just described, where inequity and inefficiency are created under the pressure of competition when the railways are expected to assume certain obligations in the national interest. It is also true when one carrier is given a subsidy to lower its rates to assist a shipper or region. A competing carrier may be deprived of traffic for which it is the most efficient carrier. The result is increased inefficiency. The existence of effective competition means, therefore, that the traditional policy of using the

12. Royal Commission, I, p. 30.

railways to achieve national objectives must be re-examined in view of the potential effects on the development of the transportation system as a whole. That is:

"...national transportation policy has often been a great deal more preoccupied with the question of how effectively the transport system was functioning as an instrument to fulfill national policy objectives, than with the question of how well it was functioning as an economic enterprise."¹³

The Commission recommends that a distinction be made between national transportation policy and national policy which seeks to use transportation to pursue its objectives. The Commission argues that the objective of national transportation policy should be "the development of an efficient, balanced and fully adequate transportation system".¹⁴ When transportation is used to further the objectives of national policy this must be done in such a way that efficiency is not compromised.

Economic Efficiency and National Transportation Policy

It is necessary to examine the notion of efficiency used here before turning to a detailed study of the Report.

The Commission defines efficiency in the following manner:

"...efficiency requires that traffic be distributed among the various modes in such a way that, with a minimum use of total economic resources, each provides the service in which it has the greatest comparative advantage."¹⁵

This definition refers explicitly to the notion of an efficient allocation

13. Royal Commission, II, p. 180.

14. Ibid., II, p. 201.

15. Ibid., II, p. 3.

of resources among the different modes of transport. This situation obtains when traffic is distributed among the modes according to the inherent advantages of the different carriers. If this condition is met, the total use of economic resources is minimized.

As the discussion in Chapter 1 indicates, economic efficiency in the national transportation system involves much more than an efficient allocation of resources among the different modes of transport. The achievement of economic efficiency requires that individual carriers as well as the industry as a whole be efficient. This means that the number of firms in the industry must be such that economies of scale and economies of high utilization are fully exploited. Furthermore, this definition entirely ignores the very important subject of how economic efficiency is to be achieved, whether by the market mechanism or by regulation or some combination of competition and public intervention.

These additional aspects of economic efficiency receive some attention in the Report. They will be considered in their proper context in the subsequent discussion on competition and public intervention. However, the concept of the competitive relations among the different modes is the dominant topic in the Report. The Commission is most concerned with eliminating and preventing what it refers to as distortions in the competitive structure of the transportation system. The competitive structure is defined as not distorted when each mode is exploiting its inherent cost advantages to the fullest extent. Only when such relationships exist among modes will competition be able to fulfill its function, which is to regulate the efficient allocation of resources among modes. If such relationships do not exist, competition will only exaggerate the distortions. Where competition does not exist, public policy must

"simulate competitive conditions".¹⁶ These are the essential aspects of the argument in the Report.

This emphasis on correcting the competitive structure between modes is reflected in the discussion on efficiency. The discussion is confined to examining under what conditions an efficient allocation of resources between modes is likely to be achieved. Direct evidence is available in the Report to support this conclusion. For example, the Commission recommends that the Productivity Council undertake a study of "the efficiency of rail operations" because this subject and the productivity of labour on the railways "are fertile fields for special study".¹⁷ (Emphasis added.)

It is clear also in the proposal suggesting that efficiency be the sole objective of national transportation policy. It is suggested that a distinction be made between it and national policy, which may use transportation to achieve its objectives. The Commission argues that it is possible to devise methods of public intervention which will achieve the objectives of national policy and not sacrifice efficiency. The specific examples used to illustrate this point all refer to implementing the assistance to achieve the national objectives in such a manner that the inherent advantages of the modes are not distorted. The general principle is stated as follows:

"When transportation assistance is introduced as a policy designed to assist a region or an industry it should be implemented so that there is no distortion introduced into the transportation industry itself. Placing upon one mode a burden because of regional or industry transport policies will force a shifting of the burden to some shipper unprotected by competition. Placing

16. Royal Commission, I, p. 73.

17. Ibid., I, p. 49.

upon one mode of transport a benefit because of regional or industry transport policy is to give it an advantage over its competitors not dictated by efficiency, with consequent over-expansion of the favored mode, and constraint upon the others."¹⁸

The Commission is obviously referring here to efficiency in the limited sense of an efficient allocation of resources among modes. The point is that if efficiency was meant in the broader sense of economic efficiency discussed in Chapter 1 of this study, there would be no need to formally distinguish between national policy and national transportation policy. Economic efficiency may be one of several objectives of national transportation policy. As Chapter 1 indicates, it is possible that economic efficiency may be compromised to some extent in order for other national objectives to be achieved. Where governments choose to do this, it is important that economic inefficiency be minimized. But this is not to say that economic efficiency must be the only objective of national transportation policy.

It appears that the Commission discusses efficiency in two separate contexts. In the initial parts of the Report, efficiency in rail operations (defined in terms of a cost-oriented rate structure and the abandonment of unprofitable services) is viewed as a necessary step to alleviate the freight rate inequity problem which the Commission was assigned to investigate. In the second volume of the Report, efficiency is promoted as the sole objective of national transportation policy. It appears that efficiency was chosen because the Commission believes the time has come when the value of an efficient transportation system

¹⁸. Royal Commission, II, pp. 72-73.

far outweighs its value as a device to promote national objectives at the expense of efficiency. This represents a judgement on the part of the Commission for which no convincing reasons are given in the Report. The argument is essentially the following.

Briefly tracing the history of governmental participation both in the nature of investment and regulation in the development of Canadian transportation as an instrument of economic and political unity, the Commission notes that this preponderate influence has tended to obscure the importance of private initiative in the development of the Canadian transportation system. The fact is that "the transportation system which has become established in this country is essentially dualistic in nature - reflecting both its function as an instrument of national policy and as a vehicle of private venture operating along the lines of commercial principles".¹⁹

Although the objectives of commercial enterprise and national policy are often in conflict, the Commission argues that until the advent of the competitive era, government had been reasonably successful in its attempts to carry out a policy which would, on the one hand, fulfill national objectives, while on the other hand and at the same time create "the kind of climate which encourages, or at least does not interfere to any significant extent with, efforts by private enterprise to develop a financially sound and efficient transport system which is responsive to market forces".²⁰

The advent of the competitive era has necessitated a change in the purpose of national transportation policy. The growing complexity of

19. Royal Commission, II, p. 192.

20. Ibid., II, p. 193.

regional economic structures does not lend itself to an ad hoc approach of simply constructing additional transportation facilities where it appears they are needed, and then providing some sort of subsidy when problems are encountered. The traditional link which exists in national transportation policy between transport and regional growth must be broken in the sense that the transportation policy must be more concerned with the development of an efficient transportation system. If then broader considerations dictate the need for reducing economic disparity among the regions of Canada, a well-conceived and detailed analysis can be made of the specific role which transport may play in conjunction with other policies which may be necessary.

We turn now to a more detailed examination of the treatment of economic efficiency in the Report.

Competition

The discussion on the relationship between competition and efficiency is concerned primarily with identifying the necessary conditions to ensure an efficient allocation of resources (and traffic) among the modes in a competitive environment. It examines in some detail the matter of user fees, the unequal impact of regulation on common carriers as opposed to private and contract carriers, the effects of multi-modal ownership, the problem of a divided jurisdiction over transportation, and the subject of carrier pricing policies. It will be apparent that this analysis is similar to that in Chapter 1 of this study.

Other aspects of economic efficiency receive some attention, but the Commission does not explore any of them thoroughly. The discussion on market and industry structures where intra-modal competition is likely to achieve efficiency in carrier operations is very superficial. The

Report concentrates on rail-truck competition and does not examine the effects of competition in complex market situations involving many carriers.

The Commission states as a matter of conviction its preference for the market mechanism as opposed to some variety of administrative machinery as the best regulator of economic activity for the achievement of efficiency.

"...the optimum use of resources in transportation will be achieved, by and large, if each of the competing modes of transport is allowed to develop in response to the demands of the shippers for its services".²¹

The Commission recognizes that this process is a complex one. The market mechanism may need to be complemented by public policy even within the range of effective competition, and public policy must fulfill a role as a "substitute for competitive market forces" beyond that range.²² The Report refers to, but does not elaborate upon, several reasons why competitive market forces may not be completely relied upon to achieve efficiency. These reasons are related to:

"the historical role of transportation in the national development, the relative sizes of firms in the various modes which have developed, the minimum amounts and length of commitment of capital necessary to operate, the divided nature of regulatory powers in Canada, the unequal contribution of public investment, and other assistance to the various modes at all levels of government".²³

21. Royal Commission, II, p. 3.

22. *Ibid*, II, p. 4.

23. *Ibid.*, II, pp. 13-14.

The Commission acknowledges, but again does not explain, that some of these factors would be amenable to change were a "greater degree of uniformity in public policy at all levels of government" to develop. Some of those that are the result of "the economic and institutional structure of the various modes" may not be "susceptible to significant alteration by public action without the creation of instability and inefficiency".²⁴

It is important to realize that the Commission never proves satisfactorily that effective or satisfactory competition is indeed a reality in Canada's national transportation system. The only proof offered as substantial evidence by the Commission is, first, a reference to the nation-wide rail strike in August 1950 when it is alleged that the ability of other modes of transport to meet the nation's transport requirements proves that "a breakthrough had been made" and that "the railways had finally lost the monopolistic position in Canadian transportation which they had maintained for almost a century".²⁵ Second, the Commission quotes figures on the railways' share of intercity revenue freight ton miles (the share declined from 75% of the total in 1949 to 50% in 1959) to show a deterioration in the competitive strength of the railways.²⁶ This evidence is totally unsatisfactory for a study of economic efficiency.

This deficiency is significant because it reflects a strong tendency in the Report to assume that effective competition is prevalent in most parts of the country (not to say most markets in the country).

²⁴. Royal Commission, II, p. 14.

²⁵. Ibid., I, p. 8.

²⁶. Ibid., I, p. 13.

This is a very dangerous assumption in a discussion on economic efficiency, or indeed transportation in general. This is because markets must be defined in very specific terms. For example, five trucking firms may "compete" between two points, but if each has an operating authority for a different commodity, competition is in fact negligible. The Commission makes no attempt to examine how competition would in fact work in a complex market where several modes offer services. The Report argues in very general terms. This may have been the intention, and certainly references may be found which acknowledge the complexity of market situations. However, by the same token, generalizations about market and industry structure lead to generalizations about the nature of such matters as economic efficiency.

Intra-Modal Competition

The Commission correctly argues that the condition of imperfect competition occurs whenever a few firms (due to the existence of barriers to entry into the industry) supply the total product or service.

The barriers to entry into the industry may take the form of either artificial controls (which may be privately or publicly inspired) or they may naturally exist because of the fact that a large amount of investment is required in relation to the size of the market.

In the case of private agreements to control entry, prices will undoubtedly reflect the revenue-stability desires of the existing firms, and higher-than-normal prices will prevail. In the case of public controls over entry, the regulatory authority is faced with the difficult task of preventing inflated prices while meeting the revenue requirements of the firms. Where the market is small in relation to the necessary

investment, public policy must regulate both rates and entry. Otherwise, pricing "may be so disorganized that severe instability will result".

This theory of imperfect competition is well known. In effect, a national transportation policy which has as its prime objective the achievement of efficiency must therefore "seek to encourage competitive forces where the structure of the industries permits pervasive and effective competition to operate, and to regulate where it does not".²⁷

The Commission believes that, in practice, intra-modal competition can achieve efficiency only in those situation where the number of firms is great and where the amount of capital required to achieve an optimum scale of operation is small in relation to the size of the market: in other words, in the trucking industry. Regulation should be confined to maintaining standards of safety and performance. Also, in a country like Canada where the regulation of trucking is a provincial responsibility, it is essential that uniform standards exist.²⁸

Where the number of firms is small in relation to the market (i.e. railways) intra-modal competition is not a satisfactory device for the achievement of efficiency. That is, "competition cannot be relied upon to regulate price in the interest of lowest real cost".²⁹

The discussion on the relation between intra-modal competition and economic efficiency is restricted to these few very general comments.

Inter-Modal Competition

It may be recalled from Chapter 1 that four factors in particular

27. Royal Commission, II, p. 16.

28. Ibid., II, p. 16.

29. Ibid., II, p. 16.

have an important bearing on the efficacy of inter-modal competition to achieve economic efficiency in transportation. Briefly, these factors are the equalization of competitive circumstances, multi-modal ownership, the divided jurisdiction between federal and provincial governments, and the pricing policies of the individual modes. All of these factors are discussed by the Commission, but particularly the first and the last.

Perhaps the most critical factor affecting the nature of competition between two different modes of transport is the nature (i.e. the ownership, the financing and the form) of the investment characterizing each mode. The question of investment is of course related to the matter of equalizing the competitive circumstances between modes. The Commission devotes an entire chapter of its Report to this vitally important economic variable.³⁰

At the outset, the Commission feels compelled to note that "its investigations have revealed surprisingly little evidence of a consistent and considered economic approach to this allocation of public assistance among the various modes".³¹ Again the Commission argues that the growth of competition has been a major factor in demonstrating the necessity for a careful and reasoned consideration of the impact of public investment in transportation.³²

The Commission begins by briefly examining the form of investment in railways and trucking.

The railroad industry is characterized by high levels of fixed

30. Royal Commission, Chapter 2, II, pp. 21-42.

31. *Ibid.*, II, p. 21.

32. *Ibid.*, II, p. 22.

investment, which is reflected in high fixed costs, and in fairly large and indivisible units relative to the trucking industry. A commitment to build a roadway and to provide the rails, equipment and maintenance facilities will be made only when management can be reasonably assured that traffic will develop and will accrue to the railways over the long-term (excess capacity due to the nature of the investment plant invariably characterizes the immediate and short-run situation) and that rate increases, necessary for adequate revenues, can be applied without adverse consequences.

The trucking industry is not characterized by a long-term commitment to investment in either roadbed or operating equipment. Furthermore, the investment requirements are in smaller units (they are more divisible), thereby enhancing the mobility of factors. The result is that the trucking industry, with its high proportion of variable to fixed costs, is much more adaptable to short-run shifts in demand for transportation services.

It is with these considerations in mind that the Commission turns to an examination of public investment in rail and road facilities. It recognizes the long standing controversy over the provision of highways at public expense, while the railways must finance and construct their roadbed. Two proposals to rectify the situation are presented.

One would have the trucking industry pay higher user fees, based on the belief that such firms are not now paying their proportionate and appropriate share for the use of the roads. The Commission agrees with this position in principle, arguing that "an adequate assessment of user charges for all modes of transport using public facilities is very much

in the interests of efficiency of total transport resources".³³ A great deal of research remains to be done in this area to accurately assess the total economic and social costs involved, including the costs of regulating and controlling traffic, accident costs and costs relating to traffic density and congestion. Another cost to the railways which is not presently reflected in user charges but should be is an appropriate rate of return on the capital invested in highway construction. It is also necessary to include a charge for property tax assessment "to the extent that municipalities raise revenues by this means (for some modes and not for others) in excess of any direct expenditure by the municipality in servicing the transportation company".³⁴

The other proposal would have government assuming the burden of railroad investment in roadbed and track to the same degree that this occurs for highway construction. The Commission rejects this proposal on the grounds that if management is to be able to adjust the amount and nature of plant capacity to meet the changing circumstances within which it must operate, then management must be able to make those decisions which it feels are necessary without interference. Historically, the responsibility for decisions on roadbed investment was never confined exclusively to management. To the extent that this will continue, the public must be prepared to finance those projects which it deems desirable for the preservation of the public interest. However, the technological and operating characteristics of the railway necessitate the maximum control and responsibility for such decisions in the hands of management. According to the Commission, maximum responsibility on management is a

33. Royal Commission, II, p. 28.

34. Ibid., II, p. 35.

necessary step toward ensuring the greatest degree of flexibility of railroad operations. The Commission summarizes its position in this manner:

"The solution of the problem of securing an optimum allocation of resources in each mode of transport will be achieved, not by lifting the burden of roadbed investment over which railways must perforce have exclusive jurisdiction, but by levying appropriate charges, including return on investment, on all other modes of transport for roadway, navigational or terminal facilities provided, sufficient to assure that each bears its appropriate costs of operation."³⁵

One further point requires emphasis in this regard. Although a good deal can and must be done to ensure that rates reflect total economic and social costs, public policy must recognize that certain characteristics of the trucking industry will continue to encourage its development vis-a-vis the railway. It is the flexibility of the truck, due to the greater degree of mobility of resources and high variable costs relative to the railway, which fundamentally accounts for its success as a competitor. Thus:

"Increasing his fees and taxes will decrease his ability to operate, expand or contract his plant, but it will not remove from him this fundamental advantage of flexibility."³⁶

The fact is that differences in patterns of investment between modes are governed by more than strictly economic considerations. For example, the considerable public pressure for the construction of highways for pleasure driving has resulted in certain benefits to highway

35. Royal Commission, II, p. 36.

36. Ibid., II, p. 30.

transport. The point is that such things are inevitable, and "forcing the appearance of equality of opportunity between competing modes of transport by overcoming the natural, technological or social advantages enjoyed by one in order to permit 'competition' by the others is against the interests of efficiency".³⁷

In summary, it may be concluded that the Commission fully supports the conclusions drawn in Chapter 1 of this study, which stress the importance for efficiency of having the conditions in which the various modes compete equalized to the greatest extent possible. This means that specific policies must be developed to account for differences (whatever their origin) in the pattern of investment among modes. But such policies can only be effective and proper up to a point: they must not try to compensate for competitive weaknesses.

"If user charges are at a proper level to other modes, no artificial competitive disadvantage attends those who are responsible for their own roadbed. The differences in patterns of investment mean, to the private (and public) entrepreneur, that all modes of transport are not equally competitive for similar standards of service, and no amount of artificial juggling with public assistance can place the various modes on an identically competitive plateau."³⁸

The second aspect of the equalization of competitive conditions concerns the unequal impact of regulation on common carriers as opposed to private and contract carriers. It is particularly important to ensure that common carriers have a maximum degree of flexibility in adjusting rates to meet changes in market conditions.

37. Royal Commission, II, p. 31.

38. Ibid., II, p. 41.

The Commission emphatically endorses this concept. The reasons for its recommendation will be considered in the discussion on rate regulation. At this time, it is sufficient to state the principle involved:

"The freedom to change tariffs, introduce new ones, and to make specific rates to meet competition without delay must be enhanced. It is apparent to us that so long as one mode can freely quote rates at the instant of bargaining, the other is at a disadvantage not to be able to do so. Therefore, we recommend that rail rates shall be effective upon filing with the Board."³⁹

Multi-Modal Ownership

Two aspects of this structural characteristic are important for our purposes.

First, it was argued earlier that multi-modal ownership may improve efficiency provided it improves the coordination of resource allocation in transportation, subject to the two qualifications that the realization of diseconomies of large scale management not outweigh the advantages of improved coordination; and second, that the multi-modal corporation not discriminate against competing carriers in the use of its facilities in order to destroy that competition.

The Commission is in basic agreement with these principles. The Commission notes that the need to diversify by branching into investment into other modes is inevitable in a market characterized by increasing specialization in services and increasing public expenditures on highway construction (where basic capital costs can be avoided). The Commission leaves to management the responsibility for assessing the potential benefits

³⁹. Royal Commission, II, p. 64.

of the integration of services. It would be "unwise" for national transportation policy to arbitrarily limit such integration because "such limitations can inhibit the withdrawal of investment from the less efficient mode, introduce rigidities into transport investment and delay the integration necessary for movements by two or more modes when efficiency calls for it."⁴⁰

The Commission states a number of reasons why the danger of the railways assuming a monopoly position in the trucking industry is very unlikely. Provided regulatory authorities allow free entry into the trucking industry, a combination of the threat of private trucking, the possibility of prosecution under combines legislation, and the recognized lobbying strength of the trucking associations is sufficient protection against monopoly pricing practices by the rail industry.

The Commission notes two qualifications designed to ensure that the railways do not destroy the independent trucker by using their massive resources to under charge its services. First, the "railways must be required to offer to all truckers rail facilities at prices and under conditions the same as are offered to rail-owned trucks".⁴¹ Second, there must be no "hidden subsidies from rail assets or income to trucking operations".⁴²

The second aspect of this discussion on multi-modal ownership concerns the issue of the use of non-rail revenues to subsidize operations where inter-modal competition prevails. The Commission opposes any form of cross-subsidization which will lead to rates which will not reflect costs.

⁴⁰. Royal Commission, II, pp. 39-40.

⁴¹. Ibid., II, p. 81.

⁴². Ibid., II, p. 81.

"The consideration of other assets would destroy any such cost-oriented approach to rate-making and would consequently distort the use of transportation resources."⁴³

Divided Jurisdiction

A third factor affecting the relationship between inter-modal competition and efficiency is the fact that the Canadian Constitution provides for provincial control over intra-provincial transport and federal government control in all other areas. For inter-modal competition to be effective, it is obvious that a high degree of co-operation and planning must exist to enable satisfactory solutions to be found where serious differences in the objectives of policy at the different levels of government exist. The possibilities are very real for a substantial misallocation of resources to occur in realizing the nation's transportation requirements. This subject will be explored more thoroughly in the section on coordination.

Pricing Policies

A final point must be briefly mentioned with respect to inter-modal competition, and that is the pricing policies adopted by the various modes.

Historically, the most prevalent and significant pricing policy in Canadian transportation has been the value-of-service policy. This policy has been used by every mode of transport in one form or another and at one time or another. A full discussion of this policy and its importance for efficiency will follow in the section on rate regulation. But it will be useful to first state the attitude of the Commission on the appropriate-

⁴³. Royal Commission, II, p. 73.

ness of this policy in a market characterized by inter-modal competition.

The Commission is very careful to point out that it is only the particular form that this policy has assumed (due to a variety of unique historical requirements) which makes it objectionable from the viewpoint of efficiency. The policy is no longer (as it was in the monopoly era) a workable and effective form of price discrimination. It has become, under the ever increasing pressure of inter-modal competition, a device of last resort for the railways in their efforts to meet their revenue requirements. Because the use of this policy no longer reflects the desirable objective of maximizing the use of capacity, but instead reflects a desperate effort by the railways to find short-term solutions to basic structural anomalies in the market, the policy must be abandoned.

This is not to suggest that there is no place for differential pricing in the pursuit of efficiency. Thus:

"Inter-firm and inter-mode competition does not of course imply that the rates charged any individual shipper will conform precisely to the cost of providing the service which he receives. In the first place there are all of the usual market imperfections and lack of precise knowledge. Furthermore, we are prepared to acknowledge that differential pricing in a limited manner will persist even in an environment of satisfactory competition and that some differential pricing can be entirely justified and does not cause significant distortions in the use of resources in general."⁴⁴

The Commission does not explore under what circumstances differential pricing may promote economic efficiency.

⁴⁴. Royal Commission, II, p. 43.

Regulation

The shortcomings of excessive generalization in the Report are most apparent in the discussion on regulation. The proposals with respect to rate regulation are based upon the assumption, which is never justified, that effective competition is pervasive in the national transportation system, while pockets of "significant" monopoly continue to exist. This development requires a new approach to rate regulation - control over minimum and maximum rates. A proper application of this policy will eliminate inequity in the freight rate structure, and result in an efficient allocation of resources among modes of transport. In essence, the proposal calls for a cost-based rate structure with strict controls on the practice of cross-subsidization against captive shippers.

The Report fails to define both "effective competition" and "significant monopoly". By implication, it may be concluded that the Commission believes effective competition exists where competition is such that rates are kept at cost levels. Whether this competition will satisfy other requirements for economic efficiency is not discussed. The Commission is satisfied that such rates will ensure an optimum allocation of resources among modes.

Regulation is therefore defined as a substitute for pervasive competition where such competition is non-existent. The Commission recognizes three basic elements which must work toward the objective of efficiency in national transportation policy. The first is competition, the second is regulation "of a type and extent which attempts to do for the industry what universally pervasive competition would do",⁴⁵ and the

⁴⁵. Royal Commission, II, p. 13.

third, impartial public assistance.⁴⁶

The important subject of the regulation of entry and the problems it poses for economic efficiency are not examined. A lengthy treatment of the subject of abandonment of services is given. This discussion is very similar to its counterpart in Chapter 1 of this study.

Regulation of Rates

The Commission notes that while geographical equalization received some consideration even in the early stages of railway pricing policy, the primary principle upon which the freight rate structure evolved until the fourth decade of this century was the "ability to pay", or "charge what the traffic will bear", or "movement value" principle. The class rate structure was the main pillar in the application of this principle. Additional complexity in price differentiation was found in commodity non-competitive rates and competitive rates, but these were normally related to and based upon the class rate system. As circumstances changed, new types of price discrimination were adopted, but there did not occur "any careful analysis of over-all purpose or direction". In effect, "our rate structure took shape on the basis of ad hoc economic and political considerations".⁴⁷ The cost of service, while one factor to be considered, was "never an important element in the pricing of railway services for each commodity".⁴⁸ The monopoly environment and the requirements of national policy made such a pricing technique possible and in some sense justified.

⁴⁶. The matter of subsidy is examined below.

⁴⁷. Royal Commission, II, p. 45

⁴⁸. Ibid., II, p. 47.

The growth of competition during and after World War II caused a fundamental change in the pricing system of the railways. Gradually, the railways moved toward a cost-based system of pricing. Those rates (class rates and commodity non-competitive rates) which constituted the foundations of the traditional rate structure declined in importance while competitive rates and agreed charges increased in importance. The Commission examines data for the 1954-59 period and notes that the percentage of total revenue obtained from class rates decreased over that period from 2.2% to 1.7%, and from commodity non-competitive rates from 57.1% to 45.8%. Competitive rates increased their contribution from 18.4% to 23.6%, while agreed charges increased from 6.0% to 13.2%.⁴⁹ These trends were also apparent during the 1949-53 period.

The Commission examines the proposals of the Turgeon Commission for an equalized class rate scale and equalized commodity mileage scales. The Commission seems to feel that the Turgeon Commission was unable to deal adequately with the freight rate inequity problem because the full implications of competition in the transportation market were not then evident. According to the Commission, the critical period of adjustment was the decade of the 1950's. At the time of the Turgeon Commission:

"...while the railways considered that traffic had been lost to motor transportation and that revenue had been kept down (by \$50 million a year) through rate reductions to hold other competitive traffic to the rails there seemed to be some doubt that motor transportation was gaining an increased percentage of the traffic moved in Canada."⁵⁰

⁴⁹. Royal Commission, II, p. 56.

⁵⁰. Ibid., II, p. 50.

The Commission notes that the inter-city ton-miles performed by the railways increased from 54.7% of the total in 1938 to 70.3% in 1948, while the comparable figures for the trucking industry were 3.1% and 6.2%.

It will be recalled that the Turgeon Commission left the details of equalization to the Board of Transport Commissioners. The Board, in implementing Section 336 of the Railway Act which called for uniform class and commodity rate scales, felt that equalization was necessary even when circumstances were not substantially similar and thus disregarded the "cost of service principle in the pricing of railway services and reflected the thinking that railway rates could be made independent of competition".⁵¹ By 1955 however, the growth of competition was accentuating the trend of the declining importance of equalized class rated and commodity traffic. Rather than questioning the principle of equalization in the face of these new developments, the Board argued for minimum increases in class rates on short-haul traffic and minimum decreases in long-haul traffic rates. The Commission concludes:

"This policy of equalization which was adopted as a result of the investigations of a decade ago has been frustrated by the growth of competitive forces. Events have confirmed the ineffectiveness of equalization in a competitive environment."⁵²

We turn now to an examination of the content of the new approach to regulation which reflects the presence of intra-modal and inter-modal competition.

51. Royal Commission, II, p. 53.

52. Ibid., II, p. 54.

The essential ingredients of this policy are, first, the need to minimize regulation as much as possible and, second, to confine the responsibility of regulatory authorities to the control over minimum and maximum rates, to prevent non-compensatory rates and monopoly pricing respectively. The regulation of rates and entry must now be geared to an environment characterized by substantial areas of satisfactory competition and pockets of significant monopoly.

With competition assuming an ever important role as a regulator of the allocation of resources in response to needs expressed, management must be permitted the maximum degree of freedom. This implies that "the regulatory authority takes little initiative".⁵³ In this regard, rail rates should be effective immediately upon filing with the Board of Transport Commissioners. The regulatory authorities must encourage those characteristics of the individual modes for which they are best suited. For trucks, a maximum degree of freedom of entry consistent with safe operating and performance standards. For railways, encouragement in the use of incentive rates to fully exploit the economies of volume production. Management will assume the essential responsibility:

"It should be left with management of all firms in all modes to decide, in the light of potential traffic, whether to carry at the lowest possible price, i.e., out-of-pocket costs, or at some price which contributes to overheads sparingly or abundantly."⁵⁴

The responsibility of regulatory authorities where competition is strong or "satisfactory" is to ensure that the rates charged do in fact

53. Royal Commission, II, p. 65.

54. Ibid., II, p. 65.

reflect the costs of movement - that rates are at least compensatory.

The matter of compensatory rates is related to the time period. Over the long run, "long-run marginal costs are unquestionably the proper minimum."⁵⁵ To be effective in adjusting plant capacity to present and future market demands, management must give considerable attention to such long-run costs. An exclusive concern with short-run costs and adjustments would be disastrous. However, it would be highly impractical to insist that the minimum rate on every movement must be equal to, or greater than the long-run marginal costs of that movement. Short-run adjustments will inevitably be required to deal with a wide range of conditions and circumstances (for example, cyclical recessions in the economy). Out-of-pocket cost is the appropriate criterion for short-run minimum rates.

With respect to trucking, the investment structure and ease of entry negates the need for minimum rate control, both in respect to truck-rail competition, and competition between trucking firms.

In so far as intra-rail competition is concerned, the Commission recommends that in determining the cost base the Canadian National should include the market rate of interest, even though such funds are from public sources.

Analysis of cost thus becomes a primary function of the Board of Transport Commissioners. The Commission is not suggesting a new role for the Board. It is suggesting that while the newly evolving environment is reducing the need for regulation in many cases, it has made greater precision necessary in the exercising of its tasks - in particular the analysis of cost.

55. Royal Commission, II, p. 67.

"National Transportation Policy should equip the Board of Transport Commissioners with the most efficient costing section that is possible, staffed competently, and provided adequately with the necessary data from both public and private sources. Under the objectives of the National Transportation Policy is is our conclusion that the regulatory powers of the nation shall continue to be charged with responsibility for the upper and lower limits of railway rating under the pertinent circumstances of each."⁵⁶

Regulation must be concerned with protecting the market from the adverse consequences of both excessive competition and too little competition. Regulation must enforce just and reasonable rates in areas of significant monopoly. The objectives of National Transportation Policy require attention to significant monopoly because the "allocation of resources is not at the optimum and does not tend toward the optimum as it would under conditions of satisfactory competition."⁵⁷ A limited but effective system of rate regulation premised on the recognition that specific instances of significant monopoly is the rule rather than the exception today is essential.⁵⁸ The appropriate policy is maximum rate regulation. The present system is based on the concept of average monopoly and is not satisfactory.⁵⁹ Nor can the new system be imposed upon the old:

56. Royal Commission, II, p. 65.

57. Ibid., II, p. 96.

58. It should be noted that while the growth of competition has reduced the prevalence of significant monopoly, this growth has been uneven regionally and the result has been an increasing tendency toward inequity in non-competitive areas. Thus the need for maximum rate regulation is growing in importance.

59. "The average degree of monopoly which the railways have today is not itself significant and would not itself justify elaborate and expensive rate regulating machinery."
Royal Commission, II, p. 94.

"It would be a serious misconstruction of our recommendation respecting regulatory rate control to attempt to implement our proposal for maximum rate control within the present system. Specifically, the proposal for maximum rate control...is designed to replace the present unsatisfactory maximum rates and ...a partial implementation will not succeed."⁶⁰

The Commission does not define precisely when monopoly should be considered "significant". It discusses the relationships between elasticity and profit maximization, and traces the consequences of following a short-run approach in setting rates to enhance the cash position (the demand curve tends to be more inelastic in the short-run thus enabling the railways to increase rates without significant alterations in volume) at the expense of long-run volume considerations. Similarly, a long-run approach would enhance the volume of traffic (as suppliers eventually made adjustments to take advantage of the lower rates) at the expense of the short-run cash position. The Commission argues that the railways have been negligent in not developing an analysis of the demand for their services, and have thereby limited the precision with which pricing decisions can be made.

The Commission relates this theoretical framework to the practical measurement of significant monopoly. Noting that the usual measure of the degree of monopoly (the slope of the demand curve) is complicated by the presence of a kink (which occurs at the rate level where other modes become competitive), the Commission suggests a "more satisfactory measure" of significant rail monopoly. That is:

"Our examination has clearly shown that a rational

⁶⁰. Royal Commission, II, p. 85.

and objective measure of the degree of significant monopoly can be based on the relationship between cost and price. This would apply only when conditions occur which prevent the entry of new firms. In comparing degrees of monopoly among different products one would obviously need to examine the relative rather than the absolute spread between cost and price. Hence, in the case of railway shipments, the degree of monopoly for each could be measured by the difference between rate and cost divided by the cost. Alternatively the same effect could be obtained by expressing the rate as a percentage of cost. It is essentially this relationship of rate to cost which provides the basis for our proposals regarding maximum rate control."⁶¹

This statement would seem to suggest that the degree of monopoly is closely related to the degree of profitability. But profitability may be due to efficiency (in the broadest sense) or it may result from exclusive control over a market. In the latter case, profitability is related to the degree of freedom of entry. If entry is relatively free, rates which produce above normal profits are competed away. If entry is not free, as is the case with the railway industry, such profits become possible. The Commission argues that it is precisely this lack of freedom of entry into the railway industry which makes possible a significant degree of monopoly.⁶²

The Commission thus outlines one set of circumstances in which the exercising of monopoly power is feasible. It does not however provide specific criteria for the evaluation of significant monopoly. It merely notes that some rates are several times higher than the cost of shipment, that such situations constitute significant monopoly and that hopefully, with the growth of effective competition, "maximum rate regulating machinery may be scrapped."⁶³ It is useful to set out in detail the

61. Royal Commission, II, pp. 91-92.

62. *Ibid.*, II, p. 92.

63. *Ibid.*, II, p. 94.

objectives for maximum rate control.⁶⁴

1. It must limit the impact of railway monopoly upon shippers.
2. It fails in its purpose if it is seriously detrimental to the revenue position of the railways.
3. It must be flexible enough to reflect at intervals the changes in railway costs which will occur with the rationalization of plant and servicing.
4. It should leave incentives for efficiency with the railways and offer incentives to the captive shippers to use transportation as economically as they would in a competitive environment.
5. It must be in keeping with newer rate-making practices.
6. It must not be in conflict with the optimum allocation of resources in transportation.

The Commission recommends that the ceiling on rates for shippers in circumstances of significant monopoly be the variable costs of the movement plus an equitable share of railway fixed costs. Again the Commission recommends that ideally these variable costs should be the long-run variable costs. The function of maximum rate control is defined in terms of controlling the share of fixed costs attributed to the individual shipper.

"The function of maximum rate control is to place limits upon the share of these fixed costs the captive shipper must carry. The weight of the burden of inallocatable overheads determine the justice and reasonableness of the rate."⁶⁵

⁶⁴. Royal Commission, II, pp. 98-99.

⁶⁵. Ibid., II, p. 101.

The Commission recommends that the share of fixed costs be expressed as an absolute percentage of variable costs. Thus:

"...maximum rate be the variable costs appropriate to the movement as defined by the Board of Transport Commissioners, plus 150 percent of that variable cost."⁶⁶

Within the limits established by minimum and maximum rate control "the railways will be free to set individual rates by ordinary business standards and to adjust them upward and downwards as the competitive conditions and changes in cost patterns require. With this freedom the time lag between cost increases and the permission to apply rate increases is eliminated."⁶⁷ If a shipper feels he is being discriminated against, he may apply to the Board for a thorough investigation of the rate he is paying. The Board may quote a maximum rate to the shipper who may then decide to declare himself captive. He may then ship his goods (he must ship all of them) at that rate for at least one year. The railway may not increase the rate until the year end, at which time the Board may set a higher maximum rate if variable or fixed costs have increased. Any reductions in the rates become automatic, subject to minimum rate regulation.

The Commission also makes several recommendations about the application of the new formula. To avoid major dislocations, a transition period, the length of which will depend upon particular circumstances, is required. Further, the existing revenue levels of the carriers should not be significantly affected by the transition, nor

⁶⁶. Royal Commission, II, p. 102.

⁶⁷. Ibid., II, p. 107.

should shippers who presently receive benefits be deprived of at least their present measure of protection.

Regulation of Exit

The regulation of exit, or the abandonment of services, receives considerable attention in the Report.

The Commission recommends that in those instances where for national policy reasons uneconomic services must be retained, subsidies to cover the losses must be paid. Where the railways choose to retain such services on their own accord, they must absorb the losses from their general accounts and must not shift the burden onto other shippers or regions.

The Commission recommends that railways be permitted to abandon such services much more readily, particularly where alternative facilities are available. The Commission recommends a fifteen year program involving federal incentive grants to permit the orderly rationalization of existing railway plant⁶⁸ and for the adjustment of investment tied to the railways.

Coordination

The Commission advocates specific measures to improve the coordination of transportation services, and the coordination of policies such as public investment and regulation to achieve greater efficiency.

First, the Commission emphatically endorses the value of multi-modal ownership, subject to the qualifications discussed earlier in this chapter, as an organizational feature which can improve the coordination of services in the market place.

68. Royal Commission, II, p. 139.

Second, the Commission examines at length the importance of improving the coordination of decision for regulation and public investment in transportation.

In so far as the regulatory function is concerned, the Commission feels that the centralization of regulation under a single board "would accomplish very little". That is:

"It is enough to expect each agency to meet the pressing current regulatory responsibilities over the whole field of operations, standards, entry controls, rate regulation and the multifarious other problems of which only a specialized agency can even be made aware, without requiring them at the same time to be cognizant of the effects of their orders on every other segment of transportation."⁶⁹

This does not mean that there should or will be no continuous assessment of the impact of the decisions of such independent regulatory authorities on the transportation system. The Commission recommends the creation of a National Transportation Advisory Council. The purpose of this Council is to "undertake the task of continually developing goals for National Transportation Policy or a broad outline of measures to achieve them".⁷⁰ This function has not been performed by any group below the Cabinet level in government. It should have responsibilities for evaluating the nature of both the regulatory and promotional functions of government. More specifically, it should "judge and assess the impact and effect of the decisions of all transport regulatory agencies". It should also

"be in a position to study the current disposition

⁶⁹. Royal Commission, II, p. 161.

⁷⁰. Ibid., II, p. 162.

and future needs of public investment in transportation facilities, to consult with all levels of government respecting their intentions in the light of constitutional responsibilities for investment in transportation facilities, to receive the representations of interested groups, to recommend upon priorities for public investment, to test the allocation of investment funds needed in the light of the pattern of user charges, and to make recommendations on the adequacy of user charges and the effects of taxation to the Federal Government in order that costs may be borne on a rational and equitable scale throughout the country for all modes of carriage."⁷¹

It is interesting to compare this recommendation with the proposal of the Turgeon Commission for a Central Authority. In contrast to that proposal, the MacPherson Commission recommends a two-tier structure involving the function of regulation at one level and on another, the establishment of an Advisory Council which will study and evaluate the effects of regulatory decisions and the effects of public investment and subsidy policies on the objectives of national transportation policy. It is a structure designed to evaluate and to initiate policy with respect to the carriers, their market and industry structures, and the various forms of public intervention. It is therefore more appropriate for the achievement of economic efficiency.

While the Commission does not feel that it can properly outline in every detail the organization and structure of such a Council, it does make several observations. The Commission particularly stresses the need for ensuring that the Council will remain as free from political and vested interest as possible, but that it maintain a close relationship with government at all levels, industry and the interested public. The members should be a "body of laymen interested in the problems of a dynamic

71. Royal Commission, II, p. 163.

transportation system" and not a group chosen "with a view to giving representation to individual industries or geographical regions".⁷²

The Council should have available to them in the important area of research, the facilities of government, industry and professional research groups. But it must also have a small, highly skilled research staff under its direct supervision to ensure the independence of its policy considerations. Initially, as a further measure to safeguard the Council, the Transport Act must assign specific responsibilities to the Council in the light of the objectives of National Transportation Policy which that Act must set out in clear terms. Thereafter, it shall be one of the duties of the Council to make recommendations regarding these objectives and definitions of powers.

The Commission puts considerable emphasis on the need for new and relevant statistical work. It recommends the formation of a Transportation Statistics Committee, headed by the Dominion Statistician or his appointee and consisting of one representative from each of the regulatory agencies, whose function shall be the development of "an adequate and integrated programme of transportation statistics".⁷³

There is a vital need for continuing and careful analysis of all aspects of public investment. As the agencies of transport become more competitive, the decisions respecting public investment become more interdependent. Indeed, the speed with which the modes become competitive "may depend as much or more on the amount and direction of public investment in facilities as upon any other factor".⁷⁴ By way of

72. Royal Commission, II, p. 167.

73. *Ibid.*, II, p. 170.

74. *Ibid.*, II, p. 42.

example, the Commission notes that a major part of the problem of increasing regional inequities in transport costs is related to "disparities in highway development between regions". The Commission recommends a "co-ordinated federal-provincial effort to develop an integrated national highway network".⁷⁵

Finally, it should be noted that the Commission recommends the repeal of the CN-CP Act of 1933. In part this reflects an opinion that few if any measures were taken under authority of the Act by the railways. But the recommendation was inspired also by the belief that "the arrival of effective competition calls for the primary efforts of each railway to be concentrated within its own organization to effect economies".⁷⁶

Subsidy

It was noted earlier that the Commission considers "impartial public assistance" one of three elements of a policy with the objective of achieving efficiency. Once again the notion of efficiency is defined in terms of the efficient allocation of resources among modes.

The argument is basically that a competitive environment exists and that when assistance is given to one carrier which results in lower rates, a misallocation of resources will occur because traffic will be shifted to the subsidized carrier. The solution depends upon the purpose of the subsidy. If the subsidy is intended to assist the carrier, rates should be left as they are and the subsidy paid to the carrier to cover losses or whatever. If the subsidy is intended for the shippers or the region, it should be made available to all the carriers. Rates would

⁷⁵. Royal Commission, II, p. 27.

⁷⁶. Ibid., II, p. 150.

reflect costs and shippers would be reimbursed. Thus, public assistance is rendered impartially - the competitive structure is not distorted.

This line of reasoning has some validity provided all the necessary conditions are present. It must be assumed that elasticities of demand are such that the lower rates would in fact draw the traffic away from the competing carrier. It must be assumed that the subsidized rates are lower than cost, otherwise no inefficiency will result. It assumes that a competing carrier in fact exists. It assumes that the subsidy is applied to lowering the rates.

The Report does not discuss the relationship between other forms of subsidy and other aspects of economic efficiency: for example, the problems related to achieving economic efficiency where the national interest requires the introduction of a new service which may need public assistance to be economically viable.

The discussion on subsidy and its relation to efficiency is divided into two parts in the Report. The first part, already considered, deals with removing hidden subsidies from some carriers. The appropriate remedy is the proper assessment of user fees to reflect the full economic and social costs associated with the service in question. Another series of recommendations were made with respect to the necessity of providing subsidies to the railways where, for reasons of national policy, they must operate uneconomic services or provide free transportation.

The second part of the discussion is developed by the Commission to illustrate its thesis that subsidies which are intended to assist certain shippers or regions may, if they are improperly applied, result in a serious misallocation of resources. The examples used are the Maritime

Freight Rates Act, the "bridge" subsidy, and the Feed Freight Assistance program. The Commission contends that the failure of these policies further strengthens its point that those responsible for national transportation policy must concern themselves with the objective of efficiency within the transportation system, and they must assess the implications for efficiency of such national policies designed to assist shippers and regions.

With respect to the Maritime Freight Rates Act, the Maritime Provinces argued, as they did before the Turgeon Commission, that the growth of competition in the Central market and the horizontal method of applying freight rate increases have deprived the Maritime Region of the benefits implied by the Act. The brief of the Maritime Transportation Commission suggested that the Act apply to all carriers, and not just the railways. The Commission recommends that the subsidy applied to westbound traffic from the select territory be available to all carriers.

"It is our conviction that favouring one mode over others will limit the choices open to shippers and keep at least some rates higher than they would be under effective competition. The effect of the present partiality of treatment is to confine some business to the rails at rates higher than would prevail under conditions of equal treatment."⁷⁷

The Commission also recommends the removal of the subsidy on intra-territorial traffic, because competition is strong enough to keep rates at the subsidized levels.

"We are convinced that the development of the trucking industry in the Provinces of Nova Scotia,

77. Royal Commission, II, p. 215.

New Brunswick and Prince Edward Island has now, in spite of the handicap, progressed to the point where the withdrawal of the subvention on intra-Maritime shipments will in general bring rail rates to a level which is favourable to the encouragement of traffic. The consequent shift of resources from rail to non-rail ment will be in response to demand for that service from shippers."⁷⁸

While the provision of assistance to the Maritime region is a matter to be decided upon by Parliament, the Commission emphasizes the need to specify the objectives of such subsidies. The subsidy would undoubtedly be applied differently if the objective of regional development is higher levels of employment or a higher rate of growth in the primary industries.

Section 468 of the Railway Act, enacted in 1951, determines the application of the so-called "bridge" subsidy. The maximum subsidy per annum was fixed at \$7 million to be apportioned by the Board between the railways on the basis of the actual amount spent by each railway on the maintenance of a certain track mileage (approximately 551.5 miles as this is the mileage on the CPR line between Sudbury and Fort William). The CNR was to receive a subsidy based on a similar mileage, although it operates some 1,010 miles of track in the area. The Act also provided that the rate reductions should apply on traffic moving in both directions over the bridge. However, the formula which would determine how the subsidy was to be applied to a reduction in freight rates was not specified by the Act, but was left for the Board to decide. The Board's decision in April 1952 applied reductions only on through traffic moving under class and non-competitive commodity rates.

⁷⁸. Royal Commission, II, p. 212.

The Commission recommends that the bridge subsidy be abolished. It argues that since the subsidy was designed to aid not the railways but the Western region, the subsidy should be available to all carriers. The Commission feels that the subsidy has inhibited the growth of truck competition. It argues that such competition in general "has been much more effective in reducing rates than the 'bridge' subsidy has".⁷⁹ The Commission claims that the subsidy discriminates not only between competing suppliers of transportation services but also between competing users of transportation services. The subsidy applies only to a diminishing number of shippers who ship a diminishing volume of traffic under class and non-competitive rates. The subsidy also discriminates against shippers in British Columbia who are competing with shippers in the Prairie Region for the Eastern markets. To achieve efficiency, the Commission argues that "public assistance to carriers or users of transportation should be allotted impartially."⁸⁰ (Emphasis added.) This statement appears to contradict what the Commission has been suggesting throughout the Report. At no time previously has the Commission indicated that public assistance be rendered to users of transportation impartially. Indeed it has suggested that assistance to particular regions or shippers in the form of subsidy on transportation charges may be an effective tool for regional or industrial development.

One may very well agree with the Commission that such a subsidy should be available to all carriers, but disagree with the argument that all shippers must receive equal treatment as a matter of principle. If the

⁷⁹. Royal Commission, II, p. 229.

⁸⁰. Ibid., II, p. 229.

purpose of the subsidy is simply to relieve shippers of an excessive burden due to distance, then it may be desirable to give all shippers in the region the benefit, as in the case of the Maritime Freight Rates Act. But this will not guarantee that shippers in British Columbia, for example, will not be at a disadvantage. Indeed, in its discussion of the Maritime Freight Rates Act, the Commission suggests that the reduction be applied to a smaller more specific segment of the industrial complex with a view to achieving results consistent with the economic goals of the Maritime Region.

The Commission uses the Feed Freight Assistance subsidy as an illustration of how a subsidy to certain producers may create industrial development patterns which "adversely affect the efficiency of the use of transportation in Canada and the allocation of transportation resources".⁸¹ This subsidy, which was introduced in January 1941 and subsequently amended in September and October of that year, was designed as a "wartime measure to aid farmers in procuring Prairie feed grains in greater quantities and to keep down their costs of production so that war needs for meat and poultry products might be met".⁸²

The subsidy discriminates against trucks because in only a very few areas can the subsidy be used to assist movement by truck. The subsidy has tended to become a subsidy to the railway rather than the livestock feeder as rail rates increase because the shipper pays only a flat rate per ton no matter how high the freight rate goes. The shipper is therefore not encouraged to seek other means of transport.

81. Royal Commission, II, p. 244.

82. Ibid., II, p. 233.

The subsidy has also tended to encourage the movement of raw materials such as feed at the expense of weight-losing finished products such as dressed meat or livestock. Furthermore, the subsidy has tended to create distortions in the relationships among various feed inputs. With the subsidy, it is cheaper to use western barley than to import U.S. corn into the eastern markets. The Commission concludes its assessment of the effects of the subsidy in this way:

"Overall it would appear that the subsidy discriminates in favour of the livestock and poultry producers in Eastern Canada and the feed grain producers in Western Canada. Conversely it discriminates against the livestock and poultry producers of Western Canada and the feed grain growers in Eastern Canada."⁸³

With respect to transportation resources, the Commission argues that to the extent that transportation resources have been misallocated as a result of the development of feed growing industries and livestock raising and processing industries, inefficiencies have occurred. As a first step in alleviating the problem, the Commission recommends that the subsidy apply to all carriers and regions on the same basis and that "the assistance rate should not be higher than the freight rate available from the least-cost carrier, no matter which mode of transport nor which routing is actually used".⁸⁴ The Commission also recommends that the "Federal Government should make a detailed reassessment of the feed freight assistance policy in order to determine whether or not in its present form it is still benefiting Canadian agriculture to the greatest possible extent, or whether assistance could be more effectively applied to, for example, additional storage capacity in the feeding areas or some other

83. Royal Commission, II, p. 245.

84. Ibid., II, p. 247.

form of aid."⁸⁵

Public and Private Ownership

"By means of massive public assistance in capital structures, by grants and other devices, government, often in partnership with private enterprise, has assured the provision of transportation facilities in areas where the potential volume of traffic was at that time insufficient to warrant the provision of facilities by ordinary commercial criteria. The results fully justified the means."⁸⁶

In some cases, notably the railways, the partnership of government (which supplied funds, land, tariff protection, etc.) and private enterprise (which supplied organization and management) eventually led to the direct involvement of government in the management and operation of transportation companies.

The above quotation indicates that the Commission supports the involvement of governments in a variety of ways, including the actual ownership and management of transportation companies. However, the Commission does not give unqualified support to public ownership and management of enterprise.

Once more it would seem that the Commission views the matter in the context of the new competitive environment, and seeks to define which types of organization are most likely to achieve efficiency in these circumstances.

The conclusion reached by the Commission follows from the observation that the transportation system has achieved a significant degree of

⁸⁵. Royal Commission, II, p. 247.

⁸⁶. Ibid., II, p. 259.

maturity.⁸⁷ This development is a reflection of the increasing complexity and sophistication of the economy in general. The most important implication of this development is the necessity to recognize a distinction between the needs of the transportation system itself and the use of transportation to promote other national objectives.

For the Commission, these matters have a direct bearing on the validity of public ownership in transportation. Public ownership can be justified in those circumstances described earlier where the contradictions between the needs of the transportation system and the needs of the nation are minimal and not at all obvious. There was such a period in Canadian history. However even in those circumstances, it appears that the Commission would prefer private ownership. In the case of the CNR for example, the Commission views its origins not as a desirable development, but as an historical "accident", the result of "over-optimism" more than anything else.⁸⁸

In the present circumstances, public ownership is viewed as a solution of last-resort. In fairness however, this statement must be qualified because the Commission presents contradictory conclusions on this matter. At one point the Commission suggests that public ownership is inappropriate because it implies the rejection of commercial principles and the discipline of the market place. Thus:

87. "...within the new competitive environment there has been, broadly speaking, a significant degree of accommodation between the various modes and what appears to be in the process of evolving is an increasingly balanced transportation system which reflects both the economic advantage of the different carriers and the essential transport needs of the nation." Royal Commission, II, p. 197.

88. Royal Commission, II, p. 259.

"In our view complete nationalization of any mode of transport in Canada is not the best way to attain efficiency of services and optimum allocation of resources in transportation without the complete abandonment, so far as it is concerned, of the principles of profit maximization and dependence upon the market choices of shippers. It becomes consistent to replace these criteria with others only if, and when, any mode is demonstrably unable to survive in competition and that mode is deemed essential for national purposes."⁸⁹

The suggestion is also made that publicly owned enterprises are completely capable of operating under normal business conditions, and that a mixed enterprise system is consistent with the objective of efficiency. That is:

"The benefits of competition to the nation are substantially secure under the incentive of profit maximization and that this incentive can be made to work satisfactorily under a system of mixed private and public ownership, so long as publicly-owned transportation companies are instructed, permitted, and regulated to work under the criteria of normal business practices."⁹⁰

Perhaps the Commission defines nationalization to mean a policy to adopt under the particular circumstances where the government is obliged to take over a carrier because it cannot sustain a commercial operation vis-a-vis the other carriers. In such circumstances, where the transportation needs of the nation are being met by other carriers, there is no point in applying massive subsidies to sustain such operations, as was done in the case of the CNR. In this case the government would assume responsibility only for a skeletal rail system deemed vital to national defense or other such objectives.⁹¹

89. Royal Commission, II, pp. 283-284.

90. Ibid., II, P. 275.

91. Ibid., II, p. 280.

Chapter 4

Conclusions

This last chapter is divided into three sections. The first two contain a summary of the conclusions reached in the study of the Reports of the Royal Commissions, and an assessment of the implications of these conclusions for national transportation policy. The third section examines the National Transportation Act of 1967 to determine what significance these conclusions have for the evaluation of current transportation policy.

The Turgeon Royal Commission Report

Chapter 2 revealed that the Turgeon Royal Commission made very few direct references to the subject of economic efficiency, and that the recommendations of the Report were often inconsistent with the objective of economic efficiency. Although not specifically directed to do so by the terms of reference given to it, the Commission chose to examine the problems confronting the nation's transportation system in a narrow context, concentrating primarily on the problem of inequity in the railway freight rate structure. The recommendations made to resolve this problem may have been sound, but the Commission failed to consider how its proposals might affect other objectives of national transportation policy.

Chapter 2 examined the arguments and recommendations of the Commission to determine what consideration was given to the objective of economic efficiency, and whether the proposals were consistent with that

objective. Although this task was made difficult by the absence of detailed market analysis, a number of conclusions were reached. It was noted that the Commission specifically rejected a cost-of-service approach to rate-making. It did suggest on several occasions that rates should at least be compensatory, but this was not to apply to the Crowsnest Pass Rates. The Commission did not endorse a policy requiring the users of facilities provided at public expense to pay fees which would recover the full economic and social costs associated with that usage. Support was given for the policy of subsidizing rail operations with non-rail revenues, and for subsidizing passenger services with freight revenues.

In general terms, each of these proposals or policies is inconsistent with the principles discussed in Chapter 1, which would apply if the objective of economic efficiency is desired. It must be emphasized that these principles are general guidelines which can be modified somewhat in specific market situations where efficiency is the objective of policy. An example is the cost-of-service principle in rate-making. A degree of discriminatory pricing may be desirable where excess capacity exists in the short-run. More generally, an economy which has developed on the basis of a value-of-service pricing system in transportation may encounter substantial transitional costs (due to plant relocation, disruption of trade patterns, and so on) if efforts are made to implement a cost-of-service rate policy. These costs must be weighed against the potential benefits of greater efficiency in transportation should greater efficiency become a priority for national transportation policy. These issues were not examined or identified by the Commission.

A number of other recommendations were made by the Commission which

were inconsistent with the arguments developed in Chapter 1. It was argued that the proposed Central Authority which the Commission thought would achieve economic efficiency was in fact designed to achieve greater efficiency in decision-making by regulatory authorities. The Commission also recommended the "bridge" subsidy, and rejected a suggestion that the Maritime Freight Rates Act apply to other carriers. The objective of the recommendations - to provide assistance to certain regions and shippers - was not in question. The criticism was that the Commission did not examine how the implementation of these subsidies would affect other carriers, and thereby affect economic efficiency. In each case the subsidies were to be applied to reduce the rates of the railways, and were not to apply to other carriers. It was concluded that a mis-allocation of resources in favor of the railway would be a strong likelihood.

In conclusion, it may be said that the major recommendations made by the Turgeon Commission were intended to achieve a solution to the problem of inequity in the railway freight rate structure. They were not made in full or even partial recognition of their effects on other objectives of national transportation policy. Certainly this is true with respect to the objective of economic efficiency. It is difficult to know on balance whether the recommendations which were implemented increased the degree of inefficiency in the national transportation system. The discussion was too general to make such an assessment. It would in part depend upon the situation prior to the implementation of the Commission's recommendations. It is also difficult because in some cases (e.g. user fees, regulation of entry) the Commission simply reiterated existing policy, or it made no comment. But a full assessment of this point lies outside the scope of this study.

The MacPherson Commission Report

Although it was specifically instructed to prepare recommendations for a solution to the freight rate inequity problem, the MacPherson Commission undertook a much broader evaluation of the objectives of national transportation policy and the structure of the national transportation system. The Commission justified this approach on the basis that major changes had occurred in the transportation system which made it necessary to examine the relationship between the transport industry, the economy, and national policy objectives. Problems such as the freight rate inequity issue would thereby be placed in their proper perspective.

It was argued in Chapter 3 that the major recommendations of the MacPherson Commission were intended to remove what the Commission called distortions in the competitive relations between the modes of transport. The Commission argued that economic efficiency in the national transportation system should be the sole objective of national transportation policy. The emergence of pervasive competition in the national transportation system meant that transportation policy should be concerned with the relations among the carriers, and with ensuring that each mode provide those services for which it possesses an inherent advantage. It was no longer possible to ignore the effects on other carriers and the transport industry generally which policies designed to achieve national objectives (by supporting certain carriers) would have. If transportation is to be used to promote national objectives, assistance must be given to the carriers on an impartial basis so that no distortions are introduced into the transportation industry.

The Commission argued that competition could achieve economic efficiency provided distortions in the competitive relations among the

modes were removed. To accomplish this, a number of recommendations were made. The Commission called for a cost-oriented pricing policy, but recognized the necessity of some value-of-service pricing for efficiency. Support was given to a policy of having users of facilities pay the full economic and social costs associated with the facility through appropriate user fees. The Commission opposed all forms of cross-subsidization (of passenger services from freight revenues, and the use of non-rail revenues to support transport services) which would have the effect of allocating traffic among the modes on a basis other than the inherent advantage of each mode. Finally, no mode or carrier should be allowed to support services required in the national interest by raising rates elsewhere and thereby causing a misallocation of traffic to occur.

The Commission recognized situations where competition would not or could not achieve economic efficiency. In such situations regulation must act as a substitute for competition. In terms of rail-truck competition, the absence of effective competition meant that minimum-maximum rate regulation should be implemented. This policy would prevent a misallocation of resources because rates would be compensatory in all cases where competition was effective, and a limitation would be placed on the practice of cross-subsidizing because no shipper would pay more than his fair share of costs.

In contrast to the Turgeon Commission, the arguments used and the recommendations made by the MacPherson Commission are consistent with some of the general principles discussed in Chapter 1. But serious deficiencies in the analysis of economic efficiency were made apparent in Chapter 3. In the first place, the Commission failed to demonstrate that effective competition was in fact a reality on a specific market

to market basis in Canada. It was assumed that the effective competition would achieve economic efficiency in the national transportation system. But efficiency was conceived in the narrow sense of an efficient allocation of resources among the modes. Attention was focused on removing any distortions (basically anything which prevented rates from reflecting cost) which existed between the modes which would prevent the modes from utilizing their inherent advantages. Thus, an efficient allocation of resources would be realized if rates reflected costs, and competition is defined as effective where such rates are achieved.

The Commission ignored many other problems related to economic efficiency. For example, the effects of intra-modal and inter-modal competition on managerial efficiency, on securing efficient levels of investment, on the efficient utilization of existing capacity, were not examined. The discussion on regulation ignored the problems related to achieving efficiency where new carriers request access to existing markets, and where existing carriers wish to expand into new markets.

In conclusion, it may be said that the MacPherson Commission Report was a step in the right direction toward recognition of the interdependence of the economy, the objectives of national policy, and the national transportation system. The Commission clearly understood the importance of specifying the objectives of national transportation policy, and of undertaking a study of the structure of the transportation industry and its relation to the economy, so that transportation could continue to play a direct role in the development of the nation but not at the cost of a major misallocation of resources in the industry itself. The Commission thought the country could have the best of both worlds - the realization of national objectives and an efficient transporta-

tion system. This was undoubtedly an over-simplification on the part of the Commission. But the essential contribution made by the Commission, noted above, must not be forgotten. Perhaps the Report posed more questions about economic efficiency than it answered, but it serves as a basis for further investigation and study.

National Transportation Act 1967

The National Transportation Act was passed in February of 1967, and it contains the major recommendations made by the MacPherson Royal Commission. Section 3 of the Act established the general terms and objectives of national transportation policy.

"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 export trade in or from any region of Canada 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."¹

The Act provides that the federal government may subsidize non-paying branch lines and passenger services. That is, the railways will be entitled to receive subsidies from the government to cover the operating losses on services required in the national interest. The Act incorporated the recommendations of the MacPherson Commission on maximum and minimum rates. It abolished the "bridge" subsidy. The Act created the Canadian Transport Commission which was, in line with the recommendations of the MacPherson Commission, to

"perform...(its) functions with the object of coordinating and harmonizing the operations of all carriers engaged in transport by railways, water, aircraft, extra-provincial motor vehicle transport and commodity pipelines."²

The Commission was charged with responsibilities in addition to its duties under the Railway Act, the Aeronautics Act and the Transport Act. It was to

"inquire into and report to the Minister upon measures to assist in a sound economic development of the various modes of transport over which Parliament has jurisdiction...undertake studies and research into the economic aspects of all modes of transport within, into or from

1. National Transportation Act (Queen's Printer, Ottawa, 1967) Section 3.

2. Ibid., Section 21.

Canada...inquire into and report to the Minister on the relationship between the various modes of transport within, into and from Canada and upon the measures that should be adopted in order to achieve coordination in development, regulation and control of the various modes of transport...inquire into and report to the Minister upon possible financial measures required for direct assistance to any mode of transport and the method of administration of any measures that may be approved...establish general economic standards and criteria to be used in the determination of federal investment in equipment and facilities as between various modes of transport and within individual modes of transport and in the determination of desirable financial returns therefrom...inquire into and advise the government on the overall balance between expenditure programs of government departments or agencies for the provision of transport facilities and equipment in various modes of transport, and on measures to develop revenue from the use of transport facilities provided or operated by any government department or agency. ...and participate in the economic aspects of the work of intergovernmental, national or international organizations dealing with any form of transport under the jurisdiction of Parliament."³

These provisions in the Act reflect a recognition on the part of government that more attention must be paid to improving the allocation of resources among the various modes to achieve greater efficiency in the national transportation system. But it is clear that the Act did not endorse, as the MacPherson Commission recommended, economic efficiency as the sole objective of national transportation policy. Other objectives are given explicit recognition in the Act. Section 3, which defines the general terms of national transportation policy and the public interest, prohibits any "undue obstacle to the interchange of commodities" or "unreasonable discouragement to the development of primary or secondary industries or to export trade in or from any region of Canada or to the movement of commodities through Canadian ports." The recommendation

³. National Transportation Act, Section 22.

that the railways be compensated for losses incurred in the transport of Western grain for export was defeated when the Act was considered by Parliament. Thus, statutory rates were exempted from the provision that all rates be compensatory. Mergers may be blocked if they threaten the public interest. The public interest is defined to include, without limiting the generality thereof, the public interest as described in Section 3. Thus mergers which may improve efficiency could be stopped because they constitute an unfair disadvantage to shippers, or an undue obstacle to trade. Similarly, rates and conditions of service may be challenged on the grounds that they are contrary to the public interest.

The Act does not specify any priority for these different objectives. It may be some time before the terms of the national transportation policy are clarified through interpretation by the Canadian Transport Commission and the courts. For one thing, one author has suggested that the changes made in the 1967 legislation may be more a matter of change in wording rather than meaning, because "expressions such as unfair disadvantage, undue obstacle, prejudicial to the public interest, and undue advantage of a monopoly situation, which are contained in the National Transportation Act" may be interpreted to have "the same broad meaning as the words undue, unjust, and unreasonable preference or discrimination formerly included in the Railway Act."⁴ If this is true, the principles which guided rate-making in the past would continue to be policy. To what extent efficiency considerations are taken into account is difficult to say simply from a study of the legislation.

It is clear from the statement of national transportation policy

⁴. A.W. Currie, Canadian Transportation Economics (University of Toronto Press, Toronto, 1967), pp. 228-29.

that economic efficiency is understood to mean an efficient allocation of resources among modes, with each mode performing those functions for which it possesses an inherent advantage. Competition is identified as the best means of achieving efficiency provided certain conditions are met. It is interesting to note that the Act includes two conditions (d(i), d(ii) above) not mentioned by the MacPherson Commission. It is difficult to understand how these conditions will contribute to the achievement of efficiency under competitive conditions. This is particularly true of the second condition, that tolls and conditions of service not constitute "an undue obstacle to the interchange of commodities....or unreasonable discouragement to the development of....industries or to export trade in or from any region of Canada or to the movement of commodities through Canadian ports". These appear to be objectives of policy and not necessary conditions for the effective operation of competition.

It may be concluded from what has been said that the National Transportation Act calls for a balancing of several national objectives including efficiency. The Act defines efficiency in the narrow sense of an efficient allocation of resources among modes with each mode performing the services for which it is best suited. But the Act does not assign any priority to the several objectives which it identifies, and it leaves considerable scope for interpretation by the Commission and the courts. It is therefore impossible to conclude precisely what importance efficiency will have or is intended to have with the passage of this legislation. The concept of efficiency is similar to that contained in the MacPherson Commission, and is therefore subject to the same criticisms noted in the previous section of this chapter. It is likely that the many issues related to economic efficiency examined

in Chapter 1 of this study will be raised before the Canadian Transport Commission. It remains to be seen what interpretation they will be given by that body.

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