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U.S. INTERCITY PASSENGER TRANSPORTATION POLICY, 1930–1991: AN INTERPRETIVE ESSAY

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1. INTRODUCTION

The U.S. has not had anything resembling a rational, coherent or unified policy with respect to transportation in general and even less of one regarding passenger transportation in particular. Legislative changes since the late 1970s in the direction of "greater reliance upon market forces" represent the beginning of a more coherent and consistent approach but there is no certainty that this will persist. The emphasis upon some variant of the economists' efficiency criteria may turn out to be short-lived. Certainly the "economist's hour," as it has been called,[1] took a long time coming to the area of transportation policy and despite some recent successes constantly needs to be addressed, as will be noted later. Thus the characterization of the past U.S. federal government's approach to transportation policy as "A chaotic patchwork of inconsistent and often obsolete legislation [that] has evolved from a history of specific actions addressed to specific problems of specific industries at specific times" is not an unfair appraisal, all the more telling since it came from the Special Message to the Congress on Transportation by President Kennedy in 1962.[2] As late as 1979 and despite some 20 or more years of strong pressures from the economic community, backed up more or less by every president from Kennedy on, a major policy

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study[3] could with justification still assert that the government's approach to transportation remained "an assortment of policies and programs which have been developed in an *ad hoc* fashion to achieve sundry goals or resolve various issues."[4]

This is not, of course, unique to the U.S. All countries suffer from what may be referred to as the "Grand Transportation Mystique" (GTM), which identifies transportation investments and policies as having special attributes for stimulating economic growth or solving problems in other industries. They accomplish such goals by providing lower, preferential fares or rates, expanded capacity, improved service quality and so on without regard to costs or alternative investments or policies that might often prove to be more effective and less costly. There is a belief that transport should be used as an instrument for accomplishing objectives in other segments of the economy or in the "national interest."[5] The GTM is thus a mind-set that leads governments into actions towards the transport sector that more careful thought and better knowledge would indicate to be inefficient and perhaps even counter-productive. These actions take many forms and there are numerous examples, especially in North America. But everywhere these involve enormous resources to preserve parts of a system no longer needed, to expand investment into areas of limited economic potential far ahead of potential need or demand, or to maintain a pattern of regulation that involves considerable economic waste for purposes that become increasingly difficult to explain and more difficult to justify. The GTM also encourages efforts to regulate, subsidize, operate or otherwise dabble in virtually all aspects of the provision of transport services.

To be sure, from time to time the apparent dabbling and/or expenditure may have seemed sound, perhaps sensible, necessary or maybe even "efficient." But as the economy or circumstances change, the consequences of such activities become increasingly dubious, and very costly to maintain relative to any realized benefits. The belated recognition of such past "mistakes" then gives rise to a more or less major "policy change." This study reflects upon the changes that have occurred along these lines in the U.S. with special reference to intercity passenger transportation since the late 1920s.

In Canada the major transportation policy change was identified in the MacPherson Report[6] which led to new legislation in 1967. The new policy emphasized the workability of competitive forces in Canada, especially in

the post-war environment, and the resultant desirability of refraining from using any particular mode of transport, especially railroads, as an instrument of national policy. Greater reliance upon market forces was to be counted on in the interests of efficiency and, in general, economic criteria were to be emphasized and regulation minimized. Where subsidy of any kind seemed desirable to accomplish some specific public purpose, the railroads were to be compensated for the losses involved. The previous "monopoly" position treated such loss-generating activities as a kind of *quid pro quo* for past government support and which could then be readily funded by cross-subsidy from so-called captive traffic. Such internal subsidization was no longer feasible under competition and never very economically efficient.

While the MacPherson Report focussed mainly on railroads and freight, it encompassed all modes. As the Report itself noted, the "freight rate inequity problem" was its "principal raison d'être."[7] Yet the emphasis upon the pervasiveness of competition in transportation certainly was believed applicable to passenger transportation as well. Rail passenger deficits were uneconomic and to be eliminated as the public had indicated its preference for other modes of travel.[8] Intercity passenger travel was mainly an afterthought or ignored altogether in most major U.S. transportation reports that I have been asked to examine (see Table 1) except for the adverse impacts of passenger deficits on the rail freight business. But the MacPherson Report stands out among its would-be U.S. counterparts as having taken the lead in establishing a major policy shift towards the totality of commercially provided transportation. Not a single U.S. report was so far ahead of the general economic philosophy of the government at the time. In fact, MacPherson led to a consensus in favour of change in Canada and paved the way for major legislative change within six years.

Similar sentiments were brewing at the same time in the U.S. but no study or report succeeded in capturing the flavour of what needed to be done with sufficient persuasiveness or power to culminate in implementing legislation. Indeed, the requisite legislation did not even begin in the U.S. until the late 1970s and early 1980s. The various U.S. reports, studies and the like mainly reflected a growing consensus among those interested in transportation (including academics, politicians, lawyers, regulators, providers of transportation services, shippers as well as intelligent and concerned lay-people) that existing arrangements were becoming increasingly counter-productive and that alternatives were needed. References to U.S. reports

in this study are mainly included to highlight the slow and tepid approach to substantive revision of U.S. transport policy compared with Canada. In only one major aspect was the U.S. ahead of Canada; Amtrak was created in 1970 while VIA Rail was delayed seven years, hardly something to be proud of under a transport philosophy stressing market forces and elimination of most non self-support services.

Table 1
MAJOR U.S. TRANSPORTATION POLICY REPORTS AND STATEMENTS

1. U.S. Department of Commerce, Office of the Federal Coordinator of Transportation, *Passenger Traffic Report* (Washington, D.C.: Government Printing Office, 1935). And various other reports of the Federal Coordinator.

2. U.S. Department of Commerce, *Modern Transport Policy; Documents Relating to the Report of the Presidential Advisory Committee on Transport Policy and Organization and Implementing Legislation* (Washington, D.C.: Government Printing Office, 1956). (The Weeks Report.)

3. Interstate Commerce Commission, *Railroad Passenger Train Deficit*, Report prepared by Howard Hosmer, Hearing Examiner, et al., ICC Docket No. 31954, 1959. (The Hosmer Report.)

4. U.S. Senate, Special Study Group on Transportation Policies in the United States. *The Doyle Report: National Transportation Policy*, (Washington, D.C.: Government Printing Office, 1961).

5. Special Message to the Congress on Transportation, by President Kennedy, The White House, April 5, 1962.

6. U.S. Department of Transportation, U.S. Federal Railroad Administration, *Report on the Potential for Integrating Rail Service Provided by the National Railroad Passenger Corporation with Other Modes* (Washington, D.C.: Government Printing Office, 1976).

7. National Transportation Policy Study Commission, *National Transportation Policies Through the Year 2000* (Washington, D.C.: Government Printing Office, 1979).

8. U.S. Department of Transportation, *Moving America* (Washington, D.C.: Government Printing Office, 1990).

THE SUBMERGENCE OF EFFICIENCY CRITERIA

It is not immediately obvious why the U.S. delayed so long in implementing the kind of change in policy that Canada had accomplished by 1967. The Canadian environment was certainly less structurally competitive than that of the U.S. With only two major railroads and air carriers, a less ubiquitous highway system than the U.S. and generally smaller domestic markets, competition in Canadian transportation would have appeared to be less

workable. Given Canada's lesser emphasis upon market orientation, or "capitalism" in general, the move to deregulate a substantial aspect of the economy was a bold one that might have been expected first from the U.S., especially in an area deemed as important and historically significant as transportation. Certainly U.S. economists did not lag behind economists in Canada in their analysis of the need and enthusiasm for transport regulatory reform. Many even testified before the MacPherson Commission hearings and strongly supported the final report. Most loudly cheered the passage of the *National Transportation Act of 1967* and widely proclaimed that Canada had indeed taken the lead in developing sensible economic policy toward transportation, a lead that the U.S. should promptly follow. However, more than a decade was to elapse before the U.S. got around to serious policy revisions. Even then they were partial and modal.

Thus one of the themes to be explored in this essay is why the long delay and more important, why ad hocery with respect to transportation policy persisted for so long in the U.S. It was surely not too radical to adopt an alternative that emphasized efficiency and market orientation or at least an approach that sought to assess the benefits vis-à-vis the costs of alternative and existing policies much earlier, especially in the bastion of *laissez-faire*. Certainly the virtual ignoring of efficiency criteria prior to the 1960s in Canada and the late 1970s in the U.S., as well as the earlier timing of the pro-competitive policy in Canada, cries out for explanation. The almost exclusive concern in U.S. transportation policy has been for something vaguely defined as the "national interest" which had a heavy dose of defence in it, to say nothing of "regional development or balance." Both of these notions are deliciously vague but when mixed with emphases upon "equity," "justice," "reasonableness," "fairness," "adequacy" and so on, they defy conceptual or empirical clarity. Since the goals of transport policy were never clearly spelled out, the ingredients of policy could not be related to any purpose.

Thus for example, the first explicit statement of national transportation policy in the U.S., which appeared in the *Transportation Act of 1940* is a welter of ambiguity. It reads as follows:

> It is hereby declared to be the national transportation policy . . . to provide for fair and impartial regulation of all modes of transportation subject to the provisions of this Act, so administered as to recognize

> and preserve the inherent advantages of each; to promote safe, adequate, economical and efficient service and foster sound economic conditions in transportation and among the several carriers; to encourage the establishment and maintenance of reasonable charges for transportation services, without unjust discriminations, undue preferences or advantages, or unfair or destructive competitive practices; to cooperate with the several States and the duly authorized officials thereof; and to encourage fair wages and equitable working conditions; — all to the end of developing, coordinating, and preserving a national transportation system by water, highway, and rail, as well as other means, adequate to meet the needs of the commerce of the United States, of the Postal Service, and of the national defense. All of the provisions of this Act shall be administered and enforced with a view to carrying out the above declaration of policy. ('54 Stat. 899, 1940.)

To be sure, all policy statements are vague and general. This one at least mentions the word "efficient" but it is buried or lost amid notions of "just," "reasonable," "undue," "adequate," etc.

Under this rubric and even earlier, the Interstate Commerce Commission (ICC) for example, concerned itself about the stability of the railroad rate structure, about the need to preserve "common carriage," about the need to prevent any regulated mode of transport from driving another mode out of business or even one common carrier "injuring" another. Common carriers were to "share" markets, not compete against each other, in the search for "preservation of inherent advantages." Sometimes these *desiderata* were invoked for purposes of national defence,[9] sometimes for the needs of shippers and passengers or for something else entirely such as "stability." Transport regulation often vacillated between protecting the public and protecting the firms regulated. Too often many of the markets were preserved for a selected number of regulated common carriers thereby creating monopoly or oligopoly — like situations which were then used as justification for continued regulation. The entire airline passenger industry was effectively cartelized by the Civil Aeronautics Board (CAB) for 40 years after its formation without consideration of its competitive possibilities or in the nave belief that all transport competition was "destructive." The courts occasionally reminded the regulatory commissions that they were not given carte blanche authority to create a cartel out of a competitive situation.

At the same time, no regulatory agency was able to ensure that carrier costs were minimized for any level of output because there was no way to determine the costs or quantities of particular inputs, the technology employed or managerial aptitudes. The cost side of carriers' operations were beyond the control of regulation. In the absence of competitive pressures and with the inability to compete on a price basis, regulated transportation was inefficiently provided. If we add to this the "other" costs of regulating, such as the deliberate creation of excess capacity (for defence purposes, of course), the costs of running the regulatory agency itself, the wastes involved in the innumerable and lengthy cases designed to give "due process" to all whether or not directly involved, the diversion of managerial talent from running the business effectively to taking care of matters of regulation and so on, it is clear that the regulatory aspect of public policy, so pervasive but uneven in transportation, pretty much ignored efficiency of production.

Since the other main aspect of public policy, namely provision or financing of infrastructure, was also bereft of sensible investment or benefit-cost criteria, it is evident that efficiency considerations got short shrift. In fact, anti-efficiency sentiment was so strong that attempts to make public investment in transportation subject to such criteria were systematically expunged from any proposed legislation. Nor has there been much success in developing an efficient set of user-charges for publicly provided rights of way.

Thus while the major thrust in the U.S. over the past decade has been in the direction of market forces and efficiency, there is considerable distance yet to go in terms of public investments, user-charges and even adequate enforcement of antitrust laws to forestall anti-competitive mergers and practices. But the approach to change in transportation policy and the more overt economic goals suggest at least a conceptual clarity. There is now a greater willingness to view transportation as analogous to other industries with no unique aura or magic entitling it to special attention. The GTM has been tarnished at least. It is, and ought to be, subject to the regular impacts of supply, demand, competition, technology and so on affecting all productive aspects of the economy and judged by similar criteria. The prime goal of transportation policy should, therefore, be "Efficiency within transportation, both in terms of use of existing infrastructure, vehicles, and rolling stock . . . and in terms of investment criteria . . . deviations from which require special justification. . . ."[10]

THE DISTINCTION BETWEEN PASSENGER AND FREIGHT TRANSPORTATION

Throughout the changes in U.S. transportation policies the emphasis has almost completely been on freight transportation. The original *Act to Regulate Commerce*, 1887 was the result of shippers' complaints of excessive rate discrimination; although written with sole regard to freight, it was made applicable to rail passenger traffic as well simply because rails provided both services. Bus service was included in the *Motor Carrier Act of 1935* virtually as an afterthought. Relatively few cases or proceedings were held in connection with bus transportation compared with intercity truck commodity movements. Even the creation of Amtrak was less a direct passenger-oriented measure than a means of bailing out the railway freight industry from ever-increasing passenger deficits. Almost all changes affecting passenger traffic have come about through attempts to respond to problems originating in the movement of freight. This is true of the MacPherson Report as well.

Joseph B. Eastman, one of the most important American regulatory commissioners ever, plaintively remarked in 1936 that "passenger service should not be considered and dealt with as an unavoidable but unwanted stepchild of railway operation."[11] Yet as far as *commercial* passenger service is concerned, aside from airline policy, passenger traffic has received little overt attention. This should not necessarily be lamented. Many of the carriers receiving most of the regulatory attention often wished they had been less "favoured." Even the airlines, overwhelmingly a passenger mode, received their early subsidies in the U.S. not on the basis of the number of passengers or passenger miles, but as "mail-pay" (that is, goods movement) contracts. The subsequent deregulation was based upon earlier arguments made for freight markets in general and preceded by prior deregulation of air cargo. The statement of national transportation policy in 1940 noted above omits explicit reference to air transportation probably because the latter deals mainly with passenger traffic. As one of the few texts on passenger transport puts it, "the subject of this declaration is really freight transportation."[12] In fact, air regulation was at one time to be placed under ICC jurisdiction but fear of overloading the Commission already swamped by being given jurisdiction over motor carriers in 1935,[13] led to creation of a separate commission which later became the Civil Aeronautics Board.

The assumption underlying the lack of distinction between passenger and freight transportation is that the differences between moving people rather than goods are not important. Furthermore the relative indifference regarding commercial passenger travel from a policy perspective is doubtless related to its small amount compared with total intercity passenger traffic. Passenger revenues were never a very large proportion of total rail revenues and ever since the ICC kept the data, from 1936 until the creation of Amtrak, rail passenger traffic, leech-like, recorded deficits which were made up from net revenues from goods movement. The massive highway programs of the U.S. and the concomitant development of the private automobile have relegated the size of the entire commercial intercity passenger market to somewhere between 10 and 15 percent of the total. The vast majority of the populace have feasible travel options somewhat independent of air but obviously independent of bus and rail, in the sense that, if the latter two simply disappeared, the *national* inconvenience would be slight.

What are the differences between passenger and freight transportation and do they matter as far as public policy is concerned?

There are some obvious differences between people and goods transportation. Service quality is more important for passengers than freight. Comfort of the ride is qualitatively different and more significant for people. It may be an overstatement but there is some truth in the assertion that "getting there is half the fun." Passengers have to be individually placed and guided to often pre-arranged seats unlike tons of coal or even packages of freight, and then must be more or less "entertained" *en route*. The terminal facilities need to be of considerably higher quality for people. Whether they had to be the opulent structures of many of the old railway passenger terminals which became landmarks in many parts of the country, a kind of North American substitute for European castles, is not clear. They must however be especially well organized to move people on and off vehicles or aircraft with a degree of convenience, care and dispatch unnecessary for goods. Baggage handling is another function that occasions special handling, extra costs and more careful organization. Unlike freight, passengers can also complain. Although freight shippers often voice their opinions of the service, there are fewer of them than there are passengers, and the complaints are likely to be of a different sort. The quality dimension of passenger service is thus likely to loom as far more important and of a different kind than for commodities.

All this suggests that passenger cost functions are likely to differ from those of freight depending upon the mode — air, rail, bus or water. To be sure, analytically there is no reason why a cost function related to an output unit called ton-miles rather than passenger-miles should differ in general shape. Indeed, economic analysis, in seeking to be general, makes no distinction among the various kinds of output or output units and remains wedded to a theory that leaves the output unit carefully undefined and unspecified. It thus makes no difference whether output is something physical (such as tons of steel, bushels of wheat, units of homogeneous widgets, etc.) or some non-storable service, (such as transportation, entertainment, medical treatment, etc.).

If no distinction is made between physical and service units in general economic analysis, it is scarcely to be expected that passenger-miles and ton-miles would get separate treatment although neither of these often-used transport measures can be construed as homogeneous. That is another and longer story that I have dealt with elsewhere and which needs no elaboration here.[14] Suffice to say that a proper conception of output units is essential not only for empirical research on both cost and demand functions but to pin-point that elusive but important concept in economics, *marginal cost*. We need to know marginal cost of *what* for pricing and costing purposes and for different qualities of any quantitative output unit. Fortunately much progress has been made along these lines.[15] But the lack of widespread concern over output units has made it easier to ignore the distinction between moving things and people. Both involve "transport" and for many that is good enough.[16]

Furthermore the nation's estimated freight bill is vastly in excess of the estimated passenger bill if we exclude private automobiles. Some estimates suggest that the freight bill is some five and a half times larger than the passenger bill and that this has remained fairly stable over the years.[17] Thus the insignificance of commercial passenger travel relative to freight movements in the U.S. may account for much of the neglect of the former and would partly explain the concentration of regulatory policy changes over time on the freight aspects of transportation. People-movement is overwhelmingly by private car and not for profit and thus not subject to the kinds of economic or business constraints oriented to competition control, profit regulation and route, back haul and other restrictions. Indeed, freedom of travel along publicly provided rights of way in one's own

vehicle is taken for granted. Automobile ownership is now virtually universal in the U.S. Yet this was not always the case and during earlier periods, say the 19th century, freight still ruled the aim, end and process of policy formation.

Hansen has remarked that the "distinction between freight and passenger transportation was often obscured" but that in the "developmental context" this was of little importance. In the 19th century, "Freight and passenger traffic would thus both have to be served . . . and railroads, turnpikes and waterways carried significant amounts of each. It was common to lump both together by viewing these transportation facilities as 'means of communication'."[18] Thus the opening up of the west, for example, required both people and commodities to move back and forth. Settlers could be herded into freight trains and "shipped" west like other "commodities," including settlers' effects. In fact, many were.

The foregoing suggest several reasons why the distinction is more significant than it might have seemed in the past. One is that the safety issue now looms larger. The difference between loss and damage claims for commodities is of far less concern than death and injury to passengers. In a nation spending vast amounts to improve the health and safety of its citizens, death and injury from transportation of people has taken on new importance. This of course includes private automobile travel as well. But concern for such issues has risen from a fatalistic "acts-of-God" notion to one that society has created by its own technological advances in transportation and elsewhere. It is now incumbent to direct resources to alleviate such hazards to the extent possible. Highway and airway safety concerns have taken on new dimensions as new technologies both create more potentially dangerous situations and provide increasing opportunities for remedial or preventive actions. These include the so-called "smart" cars and highways, improved aircraft guidance and control systems and soon, stricter safety enforcement measures and the concomitant rise of damage claims for safety violations and accidents. In short, the provision of passenger service by any firm is attendant with concerns for the safety of the passengers that is greater than those in the case of freight.

In addition, comfort has now become far more significant if only because the private car provides a convenient reference point for both comfort and convenience that is hard for a commercial carrier to match. A successful

commercial operation requires a degree of concern and ability to address these matters which are highly personal, that no freight agent ever had to contend with.

This suggests several things. Since the cost and demand elements are so different in the markets for freight and passenger intercity transportation and since societal rules of the game, so to speak, have shifted substantially in the direction of human safety and comfort, and other quality dimensions, the capabilities of those providing passenger services are significantly different from those who transport goods. What is an adequate railroad bed for freight traffic will no longer suffice for the smooth ride demanded by passengers accustomed to smooth highways or airways. Indeed new transport technologies, such as maglev need their own distinct right of way. It seems clear that rail passenger traffic will require separate, differentially maintained and perhaps unique rights of way if railways are to carry people. More generally, the present trend toward separate management of goods and people movement will probably continue. Air, truck, rail and water cargo carriers will increasingly involve companies totally divorced from significant passenger movements and vice versa. Amtrak and the other proposals for high-speed rail passenger intercity travel involve self-owned rights of way and separate corporations or ownership. No longer can one expect a single railroad to move relatively large numbers of people in a predominantly freight business.

The 19th century, North American model of development, which had to cope with substantial empty spaces required both people and goods, as Hansen has noted. People were needed for labour to produce a surplus and to create demands for production materials and consumption; goods were needed for export and import for both purposes. Thus a two-way, in some sense, equivalent movement of people and goods was crucial. The catalyst in all this involved some means of conveyance and rights of way. The better these were, the faster the development, or so the story went in Canada and the U.S. Probably this was the origin of the Grand Transportation Mystique. However, now that there are far fewer empty economic or geographic spaces, the people movement aspect of the developmental model drops relative to inter-regional goods movement associated with the geographic specialization already in place. There is still much people mobility but less associated with permanent settlement or even business than was the case before, say World War II. Tourist travel now predominates over people as

settlers and labour. The travel is now more round trip than earlier (some states and areas discourage new settlement)[19] and more frequent which means providers of passenger transport service must pay closer attention to comfort, convenience, cost and price than earlier. There is also more competition for the traveller's business than in the pre-war period in part because of higher incomes, more leisure time and an aging population.

In short, the movement of people and the movement of commodities represent two different industries, more distinct than ever before. Thus whatever regulation is applied to one in response to a particular set of problems is unlikely to be relevant to the other. This does not mean that a national transportation policy stressing efficiency or even nationalistic criteria cannot be formulated in a very general sense analogous to, for example, antitrust policy with an emphasis upon infrastructure. Whatever form such a policy may take however cannot avoid the increasing distinctiveness between the two industries.

THE ROLE OF ECONOMISTS

Another aspect in interpreting the evolution of U.S. transportation policy, and in particular the sea-change associated with the MacPherson Report in Canada and the various deregulation bills finally passed in the U.S. in the late 1970s and early 1980s, is the role of economists and economic analysis.

Economists have long had a special interest in transportation. Since much of the infrastructure has been provided and/or subsidized by governments, problems naturally arise of the proper capacity to create and how to finance it efficiently. These also include issues of pricing of publicly provided facilities, efficient user-charges, taxation, deficits in governments and so on, all problems that represent the economist's bread and butter. Transportation firms are of considerable interest as well, especially the railways with their "unusual" cost structures which early on led to investigation of imperfectly competitive markets.

The economic analysis of regulation began (in the U.S. at least) when the railroads were subjected to the *Interstate Commerce Act*, the first major U.S. private industry to be so treated. It is not therefore surprising that most of the well-known, mainstream, general economic theorists at one time or another and from a relatively early date devoted some attention

to transportation. For example, one of the founders of the marginalist "revolution" in economics of the 1870s, William Stanley Jevons, got his notion of the "margin" and emphasized the use of mathematics and statistics from his study of railroads in Australia. A. C. Pigou in his classic work *The Economics of Welfare* (1924) devoted an entire chapter to "The Special Problem of Railway Rates." He also engaged in a vigorous debate with another mainstream economist, Frank Taussig, as to whether "charging what the traffic will bear" in railway rates was to be explained in terms of monopolistic discrimination or in terms of joint costs.[20] Many years later, Edward Chamberlain developed monopolistic competition theory from doing a term paper for a transportation course on the "famous" Pigou-Taussig controversy. The great Swedish economist, Knut Wicksell devoted many pages to railway pricing and rational regulation of industrial monopolies before World War I in his *Lectures on Political Economy*. Other prominent mainstream theorists such as J. M. Clark, Francis Edgeworth and Frank Knight also contributed to transportation before the early 1920s.

However, beginning in the 1920s, transportation matters elicited little further interest of important general economists. This is doubtless explained by a shift of focus to more burning questions such as the aftermath of World War I, the German hyperinflation of 1919–1923, the onslaught of the Great Depression in 1929 and World War II only 10 years later. Transport problems then retreated from the mainstream of economic analysis in favour of these more serious and vexing issues and became the subject of a small subset of economists who chose to specialize in transport matters.

This is not to say that transportation problems were not severe in the decades following World War I but so were those of most other industries and indeed the whole economy. There seemed to be nothing special about transport in this context. Various legislative Acts were passed in the U.S. that were not very carefully thought out and were generally opposed by economists, especially the *Motor Carrier Act of 1935* which seemed to be a case of wilfully misguided regulation where none was warranted, certainly by the industrial structure of trucking. However, little new analysis was presented, and the ignoring of transportation by mainstream economists meant that they were little consulted or heeded on such problems. Until the late 1950s transport economists wrote textbooks that were heavy on history, law, regulatory and carrier practices but woefully short on evaluation, analysis and critique. As has been said, "The economic theorists

believed that all the major problems in the area [of transportation] had been so well resolved that further study of them would be unrewarding."[21]

Then in the late 1950s a series of works that applied up-to-date critical analyses to transportation matters renewed the interest of mainstream economists in transport. It signalled the rebirth of transportation as an important and meaningful branch of applied economics. Noteworthy is that this renewal was coincident with the policy changes associated with the MacPherson Report and the Message on Transportation by President Kennedy in the early 1960s. Indeed this marked the beginning of the deregulation movement and its capture by economists. Adam Smith had been rediscovered and the new microeconomics was recognized as applicable, meaningful and relevant for the over-regulated, financially strapped, differentially cartelized transportation industries.

Resources in transportation were seriously misallocated because of past regulation. Change was essential to avoid increasing economic waste and to stimulate innovative practices, new technologies and reinvigorate competition. The President's Council of Economic Advisors began its non-stop critique of transport regulation, and President Johnson even declared before his Transportation Task Force that transportation was the nation's number one priority! Thus began the U.S.'s long struggle to effectuate policy reform. The story will be outlined in later sections. Suffice to note here that President Johnson was side-tracked from his zeal to tackle transport policy by the civil rights movement and the escalating Indochina war. However, many economists became firmly aligned with the struggle and indeed were appointed to various government positions from which they could more directly and powerfully move forward the deregulatory agenda. The most dramatic appointment was that of Cornell economist, Alfred E. Kahn, to the head of the Civil Aeronautics Board (CAB). Having earlier declared that "applied microeconomics is the exciting new frontier of public policy,"[22] he went on to promise application of rigorous efficiency criteria to all regulatory matters and ultimately eliminate economic regulation entirely, and with it the CAB itself. He was hugely successful.

By 1980, the regulatory reform movement had achieved substantial success with both air cargo and passenger transportation rid of "artificial" economic constraints two years earlier. The firms were given (some with reluctance) free entry and exit and pricing freedom subject only to the antitrust laws

and safety regulations. In 1980 the railroads were provided a higher degree of pricing freedom and easier conditions of exit[23] and motor carriers got freedom of entry as well as exit, thereby eroding the scarcity value of previously granted operating certificates, along with a large dose of pricing freedom. Household goods carriers were similarly deregulated in 1980 and interstate bus operations in 1982, as a kind of afterthought so typical of the policy approach to passenger transportation.

It is interesting to note that the economic arguments leading to transportation deregulation and their subsequent success in both Canada and the U.S. stimulated the worldwide swing toward greater reliance on market forces, deregulation and privatization which ultimately led to the utter disparagement of the kind of socialist and communist economic planning replete with state-set prices and monopoly under petty tyrants and unpleasant dictators found in Eastern Europe and much of the rest of the world. It also presaged the end of the war between communism and capitalism since the former could neither produce the goods and services nor provide freedom or much security outside of prison. From Khrushchev's empty threat that "we will bury you" to Gorbachev's "we will deny you an enemy" implies a massive leap in visions of appropriate economic institutions. Much of the rethinking of the microeconomics of regulation and the emphasis upon market-determined prices and efficiency as the desired over-riding criterion of public policy towards transportation that took place in North America from 1960 on, and the successful implementation of policy change, paved the way for the worldwide reemphasis upon market forces. This was indeed "the economist's hour."

2. The Period Before 1930

The two main aspects of federal government transportation policy between 1930 and 1991 were the development of the transport infrastructure and the terms and conditions for the use of such infrastructure, namely regulatory policy of both the economic and safety variety.

INFRASTRUCTURE POLICY

Highways

Although early involved in building the Cumberland Road, completed in 1844, the federal government withdrew from further highway construction for almost 50 years on the grounds that such outlays were unconstitutional

and, in any event the states' requests for highway funding were many times the size of the federal government budgets at the time. Such roads as were built, sometimes stone overlaid with gravel but usually dirt piled upon logs (corduroy roads), plank roads or simply scraped and widened dirt trails, were mostly financed by state and local communities and operated as turnpikes. Sometimes private companies built roads but many of these reverted to state or local agencies when profit prospects dwindled or disappeared. The railway era especially after 1850 reduced the need and incentive to produce highways for the then existing horse-drawn vehicles. The railways had both a better right of way and the requisite vehicles and horseless motive power, to boot. Furthermore the railway right of way was privately financed although heavily supported by federal land grants. Further development of road transportation clearly awaited a new vehicle and especially a new method of propulsion which became available only in the early 1890s. Yet the highways of the U.S. were probably in worse condition through the early 1900s than they had been 40 years earlier when they were generally described as atrocious.

The reason for the demise of the road system, or rather road segments and patches, was the loss of traffic, both passenger and freight, to the railroads which, from mid-century on, dominated transport in the country. Railroads are believed to have provided some 95 percent of intercity passenger trips by the 1890s. This destroyed the turnpike companies which let the roads fall into a state of almost complete disrepair. Ultimately the responsibility for these roads reverted to local government which generally was ill-equipped and too financially strapped even to maintain let alone to expand them. The position of county road overseer degenerated into a mere sinecure. The highway "system," which had shown some signs of acquiring a real interstate character, became fragmented and run down. This was no great threat to national unity nor economic progress at the time because of the vigorous and expanding railroad system; it was the more localized and intrastate transport needs that progress had temporarily by-passed.

The inadequate and deteriorating road system became increasingly intolerable after 1890. The demand for improved and extended overland right of way soared for three main reasons: the bicycle craze, the initiation of free rural mail delivery, and the development of the automobile.

The "good roads movement," as it came to be called, sought to eliminate the disparities between rural and small-town living on the one hand and urban areas well connected with the national economy on the other. Since

railways by their very nature could not be as ubiquitous as roads, this seemed like a good place to start. By 1890 the bicycle manufacturers had begun their campaign for road improvement. Cyclists obviously wanted passable roads, and road improvement was believed to be important for national economic growth. Surprisingly the railroads strongly supported the bicycle crusade believing that the national economy would benefit, thereby increasing their business, and that road transport could never be anything but ancillary to the railroads.

Free rural mail delivery, after a false start, resumed in earnest in 1896 to provide service to villages with populations of less than 10,000. By 1900 over 4,000 routes had been established. Since the Post Office Department had ruled that service was contingent upon the availability of adequate roads, residents began clamouring for them more and more vigorously. Realizing the importance of this service for national unity as well as the obvious political, social and economic advantages of a more ubiquitous and diversified system of communications, the federal government proposed to make financial aid available to state and local governments. It was not however until 1916 that federal legislation was passed.

In the meantime the third factor in the rise of the public demand for good roads, the automobile, was beginning to make its appearance. Although only 8,000 vehicles were registered by 1900, the potential demand was already obvious. The big need was decent roads on which to drive the new machines. Thus the automobile manufacturers and owners' associations added their voices to the good roads movement.

As a result of these efforts, state aid began to be offered for highway construction. The state of New Jersey in 1891 argued that "public roads within a township were constructed for the convenience of the citizens of the counties in which they are located, and of the entire State as well of said townships."[24] The law also provided that the cost of road construction would be split among the adjacent property owners (10 percent), the state (33 1/3 percent) and the county for the remainder. Other states followed suit so that by 1917 all 48 had some form of highway aid program.

To provide for interstate needs, the federal government needed to become involved. Earlier it had organized the Office of Public Roads Inquiry to undertake research in road construction methods and to publish the results.

However, when it came to authorizing public funds for highways, considerable opposition arose which was not successfully repulsed until 1916 when President Woodrow Wilson signed *An Act to provide that the United States shall aid the States in the Construction of rural post roads, and for other purposes* or, more simply, the *Federal Aid Road Act.*[25] The rationale for federal assistance was the more effective performance of government functions and although not clearly stated, the promotion of interstate commerce.

It is perhaps not coincidental that by 1916 more than 2.5 million vehicles were registered in the country — a sharp growth over the 8,000 in 1900. Even without federal aid the automotive revolution had begun with a vengeance. With such, on top of state and local financing, the highway boom took off. To secure federal aid each state was required to assent to the provisions of the Act and create a state highway department capable of supervising construction and maintaining the designated highways. The aid was limited to post roads and in an amount not to exceed half the cost. The 1916 legislation was supplemented in 1921 by the *Federal Highway Act* that promoted an interconnected national highway system by apportioning funds to each state on a formula basis, the exact amount however depending on Congressional appropriations. Partly through these stimuli as well as the generally prosperous conditions of the 1920s, the mileage of surfaced highways grew from 154,000 in 1904 to almost one million by 1934.

Railways

The story of the railroads is more familiar and will be treated briefly. Passenger miles peaked in 1920 and fell through 1933, the depths of the Great Depression. Even before the beginning of this severe contraction, traffic had declined over 50 percent by 1929 indicating that this was not merely a cyclical phenomenon. Indeed it continued, except for the World War II years, until the railroads succeeded in divesting themselves of the passenger business and most of the directly related equipment, much of it antiquated, to the new government-formed National Railroad Passenger Corporation (Amtrak) in 1971.

The development of the railway infrastructure was significantly stimulated by federal aid mostly in the form of land grants. Although the concept of land grants was not new, having been used on a modest scale for canal

development and navigation improvements on rivers and selected highways earlier, it was employed on a vastly expanded scale in the case of railways after 1850. Ultimately over 179 million acres were given for railway construction, an area larger than Texas. The purpose of the land donations, beyond that needed for the right of way, was to provide an asset basis against which construction costs could be borrowed or as backing for loans and stock sales. The government retained alternate sections of land in a strip on each side of the rail line to sell later in compensation for the land granted to the railroads at inflated values caused by the economic growth expected to be stimulated by the new transport access. In addition, the companies were not only required to build and operate the railroad for which the grants were made but, in many cases, to move government property and troops over the line free of charge or at reduced rates. Such a subsidy, now estimated to have been totally repaid through the value of reduced rates for government traffic over the years, stimulated railway construction not only in the eastern section of the country already fairly well served by rail, but especially in the west. In fact it opened up the west much more rapidly than would otherwise have occurred. It was part of U.S. "manifest destiny" not unlike the "Canadian dream."

The rapid growth of rail capacity was mainly justified by military needs to secure the west coast from British intrusion as well as to develop the country more fully and exploit not only the land mass thereby made accessible but also the rapidly evolving rail technology. The improved technology plus the sharp rise in traffic reduced average revenues per ton-mile from about eight cents in 1848 to less than two cents in 1870. Costs fell even more in response to efficiency and volume gains. Rail mileage burgeoned from roughly 9,000 miles in 1850 to 53,000 in 1870. It tripled by 1890 and ultimately reached about 253,000 miles, its peak, in 1920. This rapid expansion combined with increased capacity of the track as well as continued improved efficiency of the rolling stock and locomotives, led to such enormous excess capacity that even the rapid growth of the U.S. Gross National Product at the time could not utilize it profitably.

A wave of mergers and consolidations accompanied the rapid expansion of capacity with the resultant development of monopolistic practices — known in railroad parlance as pools, traffic associations, or rate agreements — to maintain not only a stable *level* of rates and fares but a *pattern* of discrimination, euphemistically called the rate structure. Castigated by economists

as "value-of-service pricing," such activities caused public outrage and pressures for regulation as early as 1869 in Illinois. This was to culminate in federal regulation in 1887, discussed below.

Other Transportation Infrastructure

The federal government has only reluctantly taken a supportive role to assist new transport technology whenever its implications seem to stretch beyond the reach of private development even with the help of state and local governments. There is little tendency to examine how the new technology can be made in some sense to "fit in" with what exists; nor has there been much success at evolving an overall "plan." In short, the federal role has remained ad hoc with respect to technology and specific investments emanating from that technology be it highway, rail or air. Up to 1930 at least, the federal government's approach was of modal separation with no major attempt at intermodal coordination. Furthermore the federal role in transport was tepid and reluctant, including only "projects of truly national importance which absolutely required federal intervention to succeed."[26] Each such intervention involved the private sector in the major role of construction, operation, and/or principal risk taker or initiator. None was subject to much economic analysis, most were reactive and all were rooted in optimism, patriotism and nationalism.

In a *laissez-faire* environment, with limited, constitutional government, this was a fitting approach. However, the Great Depression changed all this.

Thus, the pattern emerged whereby initiatives for new technology, arrangements or institutions began in the private sector. If more resources were needed than the private efforts could muster, the next level of recourse was local government, then state and only as a last resort would federal government help be sought and then only if interstate or national interests were clearly involved. This is quite evident in the cases of federal support for highway and railway infrastructure. A similar pattern emerges where certain aspects of private activity are deemed antisocial or detrimental to the economy in some way. The very creation of the Interstate Commerce Commission provides a good example. In all the major transport issues the ultimate involvement of the federal government took many years. In cases of investment or finance, the assistance was piecemeal and specifically circumscribed. No blank cheques were written. Few of the infrastructure

investments involved economic or efficiency criteria. Certainly there were attempts to ensure some form of repayment, such as tolls for the Cumberland Road and the alternative parcel of land holdings in the land grant schemes for the railways as well as some other forms of *quid pro quo*. In this, a semblance of "sound" business judgement was present and was used to justify the actions taken. But no overall criteria of investment-type aid included economic calculation. The criteria were mostly defence, some notion of improvements to interstate commerce, opening up the west, manifest destiny and other aspects of nationalistic sentiments. All of these were also quite vague.

This response to pressures from the bottom up does not mean the federal government could not take the initiative when circumstances warranted. The seizure of the railroads during World War I is an example. But by and large the federal government pursued a pretty rigorous, *laissez-faire* attitude when it came to transportation of people and goods and even infrastructure until the situation virtually cried out for involvement at the highest administrative level.

This contrasts sharply with policy initiatives taken in subsequent decades at least through the 1970s. Only during the 1980s and especially in the latest transportation policy pronouncements from Washington do we see an attempt to return to a more bottom-up approach. Largely this has to do with the ideological revival of a thoroughgoing willingness to rely on market forces. It is however closely linked to the budget deficits that have beset the U.S. (and Canadian) federal governments. The return of transport policy more and more to the states and cities reflects a combination of ideology and dearth of financial resources. Policy towards transportation thus appears to have come full cycle. Nor is there much more formal economic analysis regarding transportation infrastructure than in the pre-1930 period. It is not yet recognized in U.S. federal budgeting that expenditures on roads, ports, canals or other physical assets should be treated as investments. There is still no distinction between current and capital outlays in the U.S. accounts. Given the advances made in economic appraisal of public investments, there is much less excuse for failure to do a better job of pre-feasibility analysis than in the past and to continue to rely on vague criteria concerning the national interest, prestige and the usual standby, national defence. Nor is there much merit to permitting the infrastructure to deteriorate or refrain from adding to it when warranted because of fears of raising the deficit.

Another factor forcing the federal government to respond to economic forces in general and transportation in particular was the growing interrelatedness of the economic system. Transport investment was both cause and consequence of this. And with it came the phenomenon of big business which required higher levels of government and bigger size thereof to cope with the problems. Certainly as interstate commerce grew faster than total economic activity, neither local nor state governments had the appropriate jurisdictions to deal legally with ever bigger, interstate companies. The federal role had to increase. The Great Depression simply made it more imperative and urgent. Prior to this it called for different forms of intervention which were ill-understood at the time.

REGULATORY POLICIES

The latter part of the 19th century and at least until World War I have been described as the "high tide of *laissez-faire*." Keynes exclaimed, "What an extraordinary episode in the economic progress of man that age was which came to an end in August 1914!"[27] Of course it was not such a wonderful era for most of mankind nor even for those living in the fortunate part of the world to which Keynes was referring. Nevertheless the prospects that Marshall held out for "opening up to all the material means of a refined and noble life" were not believed to be far away in the glow of Victorian optimism. Capitalism seemed to be on a roll that even the churlish thunderings of Karl Marx could not deflect. U.S. economic growth from 1850 to the Great Depression was phenomenal. Part of this was no doubt due to the railroads. True, there were those who subsequently questioned whether the railroads really contributed so much. In fact some were unkind enough to suggest that the incredibly rapid growth of railways used up excessive amounts of resources, such as iron and steel, that prices were raised excessively and scarcities occurred to the detriment of development of other manufacturing industries. Government support of accelerated growth of the rail network thereby may have slowed down development of the economy elsewhere and perhaps overall. But these caveats were to come later.

At the time, railroads were viewed as the engine of economic growth to say nothing of national cohesion, manifest destiny and the end of poverty. Part of this was doubtless true. At the same time however the railroads had by the 1860s overtaken in size and even influence, most other institutions in U.S. society. They employed many times the number of people than did the

federal government. The value of their assets was far greater than those of the largest industrial corporations. It has been argued that their social influence in the late 19th century was akin to that of television in the late 20th century or even Catholicism in medieval Europe.[28] It is true that the railroads created time zones, emphasized punctuality, seemed to be the essence of economies of scale and hence "natural monopolies," dominated many a state legislature, browbeat and swindled local communities and otherwise rode roughshod over much of American society, economy and polity for several decades. This posed an enormous challenge to free markets to say nothing of individual freedom and political democracy. Big business first reared its ugly head in the form of a railroad, which the federal government had even assisted in creating!

Partly due to its economic characteristics, namely the large proportion of its costs that are joint, fixed and/or otherwise indivisible or non-allocatable on cost-occasioned criteria, a railroad must charge a price, rate or fare for particular traffic that is differentially in excess of marginal cost. In its most sophisticated and socially acceptable sense this is referred to as "Ramsey pricing" or maximization of profits subject to a revenue constraint which is now not only permitted but legally required by the *Staggers Rail Act of 1980*. In its cruder form before 1930 it was viewed as flagrant discrimination which it often was. One form of it especially annoyed farmers, namely when railroads charged more for a short-haul movement of the same commodity than for a longer haul over the same line and in the same direction! Such a violation of the view that prices should bear some, however vague, relation to costs aroused passions. It seemed manifestly unfair. This kind of pricing combined with secret rebates to favoured shippers, frequent and apparently whimsical rate changes, chronic rate instability, general railroad arrogance and arrangements among railroads not to compete on price or service as well as to pool traffic — much like OPEC attempts to assign oil production quotas at present — led to considerable agitation on the part of small shippers mostly of farm products especially in the mid-west. They succeeded in convincing several states, notably Illinois, to pass what came to be called Granger Laws which set permissible freight rates by a regulatory commission or a legislature, prohibited long-short haul discrimination as well as free passes to public officials and in other ways sought to restrict certain dubious practices that had emerged in the provision of rail transport. Although later repealed, most of these laws were upheld on the constitutional grounds that rail transport was "affected with the public interest" and that railways

were in fact "common carriers." The latter is a concept dating far back in British common law and creates certain obligations upon those holding themselves out to provide the public with some specific service such as inns, transport providers and others. It implies among other things that prices will be published and not changed without prior notice, that all who request the service will be provided without discrimination at such prices, that common carriers assume certain liabilities for loss and damage and other transportation-related matters.[29]

Federal action was finally required when the courts held that a state could not control rates on interstate traffic. Since most of the traffic by this time (1887) was interstate, the need for federal legislation was apparent. Finally, and after many years of effort, the *Act to Regulate Commerce* was passed in 1887 by Congress. It stressed that the primary evil to be remedied was freight rate discrimination although it applied to passengers as well.

There remains some controversy concerning the "real" reason the railroads became the first major private business to be subjected to federal commission-type regulation. The conventional wisdom has it that the companies so abused their excessive amount of economic power that the government was forced to retaliate by special regulation, even of otherwise sacrosanct private property, to eliminate abuses and provide suitable punishment as a preventive. It has more recently been argued that the railroads themselves invited regulation to implement a more effective cartel since their pooling arrangements frequently broke down and "cut-throat" competition erupted.

The truth seems to be that railroad arrogance and behaviour were the ultimate reason for the introduction of regulation. People had been so aggravated along with obvious abuses, that for the previous 20 years some 150 separate bills had been introduced in Congress. Finally when the Wabash case invalidated state regulation of interstate commerce, some kind of federal control seemed likely to pass. At this point the railroads recognized that "we must make up our minds to it" as one railway president put it. After that, the attention of the companies focussed on making the regulation as palatable and innocuous as possible. At least something better than the tough state regulations seemed preferable.

And so the Act was passed. President Cleveland signed the bill which declared railroads to be common carriers; created a five-man commission; outlawed pools and rate discrimination; required that all rates and fares be

just, reasonable and published; authorized the Commission to investigate any interstate railway; empowered it to compel witnesses to testify and to secure relevant documents; and required railroads to submit regular reports and adopt a uniform accounting system. At the end of March 1887, with five Commissioners and 11 staff members, the Interstate Commerce Commission set out to eliminate abuses of economic power by the largest industry in the country, at the time employing about 800,000 workers and having over 100,000 miles of track and abundant other capital assets. Hope ran high. One newspaper proclaimed that "the *Interstate Commerce Act* is working wonders and the rail magnates are trembling," after several early decisions. Alas this was not to be the case until over 20 years later.

As the Commission sought to enforce its rulings and to behave as it correctly believed Congress had desired, the Supreme Court systematically emasculated all of the authority the ICC thought it had in a series of rulings extended over the next 15 years. By 1903 the Commission lamented that all it could do was "investigate and report and such orders as it can make have no binding effect."

This was also the era of the so-called "first merger movement" which radically transformed the structure of American industry. The merger mania, it should be noted, took place within a short period of time following the passage of the first federal antitrust law, the *Sherman Act*, in 1890. The attempts to restrain the development of monopoly power in the first place fared no better than the attempts to restrain its abuse once "naturally" acquired as was presumed in the case of railroads! The U.S. government was thus called upon to seek to make the 1887 transport act effective and at the same time create a climate wherein most other industries would be restrained from cartelization or at least from more industrial concentration than had already occurred between 1897 and 1904, the period of the first merger movement.

Antitrust was more difficult to make effective because the courts were unwilling or unable to unscramble the corporate eggs once blended, and fine legal distinctions began to be made between "good" and "bad" monopolists. The antitrust laws with no regulatory commission or agency at this time (the Federal Trade Commission was created in 1914) were to be enforced by the Department of Justice through the courts, something that commission-type regulation was seeking at least partially to avoid but which the ICC to this point had not yet accomplished.

The Interstate Commerce Commission however fared better than did anti-trust activities. By 1910, through a series of new enactments, Congress restored to the Commission all the original powers it thought it had previously given. At the same time the courts limited their right of judicial review of ICC findings and judgements. This change occurred because of the immense support by the activist President Theodore Roosevelt of railway regulation and the ICC in particular, as well as the growing public opposition to the railroads and the other "malefactors of great wealth." In any event, the ICC had a second chance. Unfortunately the Commission squandered its opportunity and with its now considerable strength it essentially preserved the *status quo* with regard to the rate structure and collective rate-making by the carriers themselves in rate bureaus. It also denied a series of general rate increase requests by the railroads or sanctioned lower increases than in retrospect were needed.

The exigencies of World War I and confusion and division within the ICC induced President Wilson to exert federal control over the whole railroad system in order better to co-ordinate traffic, among other things. The ICC was not believed capable of doing the job. The federal Railroad Administration was set up in 1917 and by its general Order No. 1 the Director General of Railroads required the pooling of all equipment and facilities, ordered new routings regardless of previous arrangements, denied shippers the right to route and sought to operate all railroads as a single *national* system.

At war's end, the shippers clamoured for the return of the railroads to private operation and ICC regulation probably because the Commission had resisted rate increases despite an acknowledged need that was acquiesced to under government controls. Others wanted nationalization and fashioned plans that received some attention. However, *laissez-faire* principles were so firmly embedded that not only were the plans rejected outright but attempts to extend the period of federal control were ignored. Instead Congress passed the *Transportation Act of 1920.* This broadened ICC authority, legalized railroad combinations subject to an overall "plan" that the Commission was to devise, enshrined the rule of rate-making (fair return on a fair value) into law and gave the Commission control over security issues and service.

In general the idea was to rationalize, definitely *not* nationalize, the system and abandon the emphasis upon competition among railroads and between them and the rapidly emerging truck and bus industries. Inter- and intra-modal

coordination was the new fetish probably inspired by the credible job done by the Railroad Administration during the war and the equally new fetish from which coordination derived, namely "scientific management." Even Joseph Eastman, soon to become an ICC commissioner and destined to be its greatest, approved of both extension and nationalization. But it was not to be. The *Transportation Act of 1920* hoped that private ownership and operation under the "inspired" leadership of the ICC would yield most of the advantages of nationalization without the disadvantages.

This was not to be either. The Commission was reluctant to exert any leadership and refused to formulate a formal plan for railroad reorganization ostensibly to eliminate the so-called weak-strong road problem. The ICC even begged to be relieved of the task of bothering to concoct any plan. The Commission did not "free the industry . . . of the accumulated burdens of past ills . . . [nor] establish principles and practices for this regulated industry beyond and above those recognized in the general competitive field."[30] Nor did the Commission urge the railroads to reduce bonded indebtedness or to consolidate into fewer more economically viable systems. This meant that when the Great Depression began, the industry suffered far more from reduced business than would otherwise have been the case, and the Commission, regardless of its legal authority or of any infusion of leadership zeal not hitherto apparent, was totally unable to help out under such overwhelming economic forces.

Conclusion

On the eve of the Great Depression, the U.S. possessed a substantial rail system that was heavily concentrated in the east and sparse but adequate in the west and much in between. The mileage had already begun to shrink to eliminate much redundancy in particular parts due mostly to the frenzied over-building especially between 1893 and 1920. The beginnings of an increasingly ubiquitous highway system had been well established which hastened the rail redundancy. Passengers had growing options for intercity movement in many parts of the country but especially the eastern section. The rail monopoly had been effectively broken and was never to be regained in either passenger or freight business although this was not recognized at the time.

The railroads, for the most part, supported the alternative highway mode on the assumption, often stated, that the new service using highways could

never be anything but ancillary or "feeders" to rail connections for ongoing journeys or goods shipments. It would also relieve railroads of the short trip or haul which was the less profitable phase of the business anyway. By so doing, trucks and buses and even private automobiles should be encouraged for reasons of profitability as well. Further highway construction and the industries producing the vehicles would add to rail traffic as the raw materials and finished products would inevitably be shipped by rail, except for the minor exceptions in a few parts of the nation where waterways might be used. The stimulus to overall goods production and incomes generated by the new mode and its infrastructure would also raise the growth rate of GNP which would further stimulate railroad traffic.

Thus instead of opposing the new mode, the railroads supported it, at least in a broad, general sense. They even invested somewhat in bus transport to serve light-density areas without branch lines or to permit branch line abandonment in many cases. The Pennsylvania railroad helped create the Greyhound network, and other railroads owned part of the National Trailways bus system. By 1941, rail interests are reported to have owned 1,759 buses serving 44,700 miles of route.[31] Railroads invested very little in the trucking industry and viewed it as even less of a threat. It is hard to see this as especially short-sighted from the vantage point of the late 1920s. Air travel was certainly no rival yet and the highways, pipelines and waterways had not yet made such inroads as could topple the mighty railroads from their pre-eminence. Besides traffic was growing rapidly during the Roaring Twenties so there was plenty to go around even if one's relative share was shrinking. On the other hand, rail short-sightedness was monumental by virtue of hindsight. Had they taken over the short-haul trucking or bus businesses to a far greater extent, which was then feasible, they would have received grandfather rights in the less likely event that highway service would have been regulated. In either case, the extent of modal integration might have been far greater than became the case in the U.S.

Failure to enter more fully into bus and truck transport also supported development of independent truck and bus operations which heightened the emphasis upon modal separation despite all the stress that came to be put on coordination and integration. This is all speculative, of course, but is one of the "if only" myths as noted in "Icons and Albatrosses."[32] It should also be remarked that any major entry of railroads into truck or bus transport might well have led to several massive multimodal oligopolies whose

contributions to efficient resource allocation by mode might well have thwarted developments in truck and bus transport. Intra-firm efficiency might have left much to be desired by such large multimodal enterprises whose (largely railroad) experience and sympathies, to say nothing of relative investment commitments, might have had strong negative effects.

THE POLICY OF MODAL SEPARATION

The reticence of rail companies to enter into truck or bus operations extensively or to acquire large numbers of existing enterprises in highway transportation combined with the national fear of excessive railway concentration of economic power, already enormous before 1887, led to legal and regulatory restrictions against multimodal companies or what later came to be called integrated transportation firms. As early as 1912, long before highway modes were anything more than a distant possibility, the *Panama Canal Act* was passed forbidding railroads from operating or having any interest in water carriers using the Panama Canal without specific ICC approval. The fear was that such ownership would restrict the development of intercoastal water traffic via the Panama Canal to protect the rail monopoly over the coast-to-coast traffic by land.

Similar beliefs arose during the 1930s with respect to rail acquisition of trucks and buses. The *Motor Carrier Act of 1935* sought to preserve the "inherent advantages" of motor carriers, a corollary of which required that any motor carrier acquired by a railroad must be used "to public advantage in its operations." This was promptly interpreted by the Commission as obligating the railroad to operate the motor carrier entirely as an adjunct to its train service.[33] Congressional intent was to prevent the acquisition of control of motor carriers so that it not "get into the hands of other competing forms of transportation who might use the control as a means to strangle, curtail or hinder progress in highway transportation for the benefit of other competing transportation."[34] There was, in short, concern that the railroads would acquire other modes solely to protect their own much greater investments in rail facilities. It was feared they would stifle developments of other modes except as small-scale contributors to rail operations and would perpetuate rail monopoly power and profits. There was little recognition that a multimodal enterprise could contribute to overall efficiency or that in many respects the modes were complementary rather than competitive. Thus the tradition and even policy of modal separation in the U.S. persisted until the early 1980s, well after the deregulation movement had taken place.

This is all the more surprising since enthusiastic support for the integrated transport firm selling transportation by rail, truck, bus, water or any other mode presumably using the least-cost combination for any shipment or travel, began early in publications by H. G. Moulton and The Brookings Institution.[35] These were reiterated later. For example, the Doyle Report (1961) flatly stated that "there should be no prohibition in the law against the formation of . . . a transportation company . . . a carrier of any mode [should be allowed] to become part of such a transportation company."[36] In 1979 the National Transportation Policy Study Commission recommended the elimination of "Federal impediments to common ownership and intermodal coordination and cooperation," and the promotion of "effective joint rates and through service within and among modes."[37]

Despite removal of most formal restrictions against intermodal operations and ownership, there are few examples in the U.S. today of large multimodal enterprises and nothing analogous to each of Canada's two major railroads owning and operating large national trucking companies. Indeed, in Canada, multimodalism has a long history with the CPR chartering ships to carry traffic on the Pacific Ocean in 1886, inaugurating passenger service there in 1891, passenger and cargo services on the Atlantic in 1905, and later truck and airline services as well. The MacPherson Commission found rail ownership and operation of trucking services in Canada consistent with efficiency and saw "no reason to limit the entrance of railway companies into any other mode of transport. The experience of other countries with such restrictions does not encourage us to recommend it to Canada."[38] So much for the U.S. position on modal separation!

The more or less naïve U.S. position on modal separation, is believed to have retarded the growth of piggyback (TOFC [Trailer on Flat Car] and COFC [Container on Flat Car]) operations in the U.S. as compared with Canada and otherwise to have impeded efficiency achieveable from greater modal integration. On the other hand, at least at the beginning, the belief that the railroads might have misused or wasted, from the social point of view, any large-scale investments in truck or bus operations was not so far-fetched as it seems.

Since rail intercity passenger traffic had not accounted for much over 10 percent of total rail revenues during the 1920s and an even smaller proportion of profits, in the face of a sharp downturn in number of passengers and

passenger-miles, it is difficult to see why railways continued to stress investments in and general support of this segment of the business. Certainly, the ICC did little to require continuance of unprofitable service even after being given what has been referred to as "sweeping" powers over abandonments. Indeed, the Commission "Guided primarily by financial considerations . . . generally approved abandonments."[39] Maybe there was something to the "image" in the sense that despite lower profitability, perhaps some railroads felt that the prestige of grandiose terminals, the luxury side of passenger travel that provided association of the railroad executives with the rich and the famous in America was worth the expense. At least it suggests that railroads would have been unlikely to stress development in truck or bus subsidiaries had they chosen to move vigorously into these areas during the 1920s when the opportunity presented itself.

For the latter 1920s the railways were still profitable, possessed much monopoly power in numerous freight and passenger markets and were still the giants of U.S. enterprise. After return to private ownership and the other features of the *Transportation Act of 1920*, they were expected to remain so. The Act further enhanced the powers of the ICC to prevent "cut-throat" competition, sustained collective pricing agreements (i.e. rate bureaus) contrary to the antitrust laws, facilitated abandonment of unprofitable service and otherwise benefitted the railways under the new so-called "positive" approach to regulation. The latter involved helping resolve the "weak-strong line problem," stimulating mergers between profitable and less profitable or losing railroads and, in fact, aiding in the accomplishment of the new rule of rate-making which sought to ensure to each carrier, as a kind of *quid pro quo* for being subject to regulatory "restraint" and more or less ignoring the benefits of past public *largesse*, a "fair return on a fair value" of the property devoted to provision of rail transportation service. This, of course, meant enormous profits or yields on assets of dubious value for an aggressive and lucky few in the likely event that the Commission failed to develop a sensible plan of railroad consolidation.

All of this was speculation. In less than a year of the close of the decade of the 1920s, the economic and, indeed, social and political world of the U.S. and almost everywhere else was suddenly and irrevocably changed beyond all belief. No one foresaw the Great Depression, least of all economists or governments.

3. The Great Depression

The 30 percent contraction of real GNP from 1929 to the trough in 1932-33 was the most severe to beset the U.S. economy before or since. It was also the longest, with the level of economic activity remaining persistently below that achieved in 1929 for 10 years and longer than that in terms of GNP per capita. The reasons for the severity and duration are not yet altogether clear. From the U.S. point of view, however, what would doubtless have been a more or less routine contraction in 1929 was turned into a rout probably because of three major macroeconomic policy errors that it is hoped will never recur. In the first place Congress passed the Smoot-Hawley protective tariff Act in 1930, which understandably led to sharp retaliation from the U.S. trading partners. Such "beggar-thy-neighbour" policies succeeded in shriveling up much international trade including, of course, U.S. exports. Second, The Federal Reserve System allowed the money supply to shrink by about 30 percent which kept real interest rates too high and promoted financial panic. Third, the income tax rate was increased in 1932 to balance the budget. This reduced disposable incomes and contributed to the decline in personal consumption expenditures, the single biggest component of GNP.

Whatever the causes of the excessive severity of the depression beyond the probable "normal" cyclicality of market systems, the results for the railways were devastating. Passenger traffic dropped by almost 50 percent between 1929 and 1933 while passenger revenues collapsed by about two thirds. Freight performance was almost as bad. Despite declining operating expenses, net income fell from a positive $977 million for all roads in 1929 to a negative $122 million in 1932. It remained extremely low for most of the 1930s and only exceeded the 1929 level in 1942 during the wartime boom. Bankruptcies rose during the depression despite generous government aid and in 1939 included almost one third of the total rail mileage. Passenger deficits began in earnest and were the main reason for the overall deficits and minuscule net revenues. Starting with modest negative earnings in 1930, the passenger deficit rose to the $250 million range during the years 1938 through 1941 and constituted some 30 percent of net revenues from freight traffic on average until 1941.

However, while rail executives believed that the dismal passenger performance through 1933 was largely due to the depression, total intercity passenger travel had only decreased about 20 percent since 1929 compared

with 50 percent for rails. In fact railroads suffered more than any other mode in extent of decline of business,[40] as was pointed out by Joseph B. Eastman, the Federal Coordinator, a post created by the *Emergency Transportation Act of 1933*.[41] His Report also asserted that, important as the depression was, "Flight of passenger traffic from the railways is due to failure to keep pace with modern methods of marketing, servicing, pricing and selling."[42] The railroads were lacking in "personal helpfulness," depots and terminals had been designed mainly for "operating convenience" rather than "passenger convenience," marketing policy among the railroads was competitive rather than coordinated. The entire attitude of rail personnel from management down was obsolete and needed radical change if the "great opportunities for the reestablishment of railway passenger service upon a profitable basis" were to be seized. Such opportunities were believed to exist because the growth of automobile traffic "indicates the volume possibilities which await a still more attractive and economical mode of travel."[43]

Many other suggestions for reform were made in the Report of the then powerful Federal Coordinator. However, as has been pointed out, "rail executives resorted instead to `flash' over substantive reform and hoped that their problems would go away."[44] The new strategy was called "streamlining" and involved development of extraordinary passenger trains such as the Union Pacific's M-10,000, and the Burlington Road's *Zephyr* which captured the public's imagination at the Century of Progress Exposition in Chicago in the summer of 1934. Movies were made of the new trains and a new streamline craze became for a while attached to numerous types of product.[45] For a short time, the downward trend in rail traffic was arrested. Both the number of passengers and especially passenger-miles rose from the depths of 1933 by 15 and 52 percent respectively through 1937. However, traffic dropped off again until the brief wartime revival then resumed a continuous decline through 1970 before the creation of Amtrak. "While the success of the streamliners provided reason for optimism, all was not well in the railroad passenger business."[46] Indeed, passenger deficits stayed high through 1941 despite the traffic gain and resumed their upward spurt after 1945. More needed to be done along the lines recommended by the *Passenger Traffic Report*. By the time the railroads realized this, it was already too late.

On the other hand, there were more positive aspects for rail rivals largely because, in seeking to moderate the depression, the federal government embarked on massive, expenditures many of which went for transport

infrastructure in highways and airways. In fact, the quality and quantity of the highway system were considerably improved by World War II over what had been its state at the start of the decade. Air transport also received a big boost not only from direct subsidies but from development of the airways and airport systems as well during the depression. Thus two of the railroads' leading rivals received right-of-way expansions that made their future inroads upon rail traffic far more potentially severe and certainly much earlier than would otherwise have been the case. Buses and private cars siphoned off rail passengers especially for short-haul traffic while airlines were preparing themselves, also at public expense, for attacking the long-haul passenger business. Truck traffic was to capture increasing amounts of the freight business but more important, the higher rated and valued traffic was rendered more susceptible to such "theft" by the railroads' misapplication of value-of-service pricing. That is, freight rates and some passenger fares were kept further above marginal costs than demand elasticities warranted especially when the latter increased as inter-carrier competition grew.

Thus the general rail advantage of lower marginal or variable costs was often dissipated by excessive and not necessarily profit-maximizing mark-ups over a specific unit cost, itself over-estimated by inclusion of arbitrary amounts not related to avoidable costs but rather arbitrary accounting allocations. In short, the railway pricing system at the time was crude to say the least — a by-product of monopoly power and general lack of competition and marketing savvy as well as inadequate knowledge of specific avoidable costs. A large number of rates, perhaps as many as 30 percent were, even in a later and more enlightened era, found to be below the ICC version of actual variable costs! Many more were excessively high in terms of maximizing the net revenues or net profits. The rate structure made little economic or financial sense.

The arrival of new competitors on the scene, with not only different costs but generally superior quality, meant that without significant reductions in particularly high rates, far more traffic would be lost than was either necessary or, from a social point of view, efficient. Below cost rates needed to be raised. Clearly the "preservation of inherent advantages" of each mode, required by the 1940 Act, could only take place under a regime where specific rates and fares reflected correctly the underlying marginal costs and the specific demand elasticities. Some mark-ups over costs were needed to finance the many joint, fixed or otherwise indivisible costs so characteristic

of railway operations. This was, of course, too much to expect during the era of rail monopoly when the rate and fare structure was established. The incentive to create an economically rational structure did not exist. Nor, it should be noted, did the techniques. The period of deep depression followed by the war-induced traffic boom failed to provide incentives to price rail services correctly either even if efficiency had been the goal. Only after these overwhelming events could rational traffic allocation via efficient pricing have a chance to succeed.

The attempt to achieve allocative efficiency by *extending* the scope of regulation to all modes and providing the ICC and CAB with far reaching powers was not shown to be fruitless and enormously costly until after the late 1940s. Thus, in a major sense, the Great Depression provided fertile soil for the "grand experiment" or what I have called elsewhere "the grand Benthamite design"[47] involving detailed regulation of all modes and most aspects of transportation under private ownership. The failure of this experiment engendered the reformist zeal of the late 1950s. The depression itself represented an enormous failure of the market system, even if its severity and duration had other contributing factors. Certainly it discredited much faith in reliance upon market forces to tolerate a disaster of this magnitude. In this sense, the experiment in attempting to modify or negate market forces was induced by the depression. The form it took in the U.S., namely development of what came to be called the "fourth branch of government," (see below) was relatively benign when compared with the more radical experiments with central planning, widespread nationalization and the like elsewhere.

But in the bastion of free enterprise, private property capitalism and democracy, it was not clear what should or could be done. The response in transportation was essentially more of the same. It was argued that the ICC failed earlier because it did not have enough authority and jurisdiction over all modes especially with the rapid growth of bus, truck and automobile traffic stimulated by the burgeoning highways. The quality of the Commissioners and staff was likewise not adequate. Since reliance on market forces seemed out of the question in the circumstances of the depression, it seemed logical to remedy these defects by legislative and personnel changes. After such measures, the ICC could reduce the reliance upon competition, regulate entry and exit, determine mergers, set rates and fares, monitor investments and financial arrangements of the carriers, specify accounting practices and

so on in an effective fashion. In short, it could coerce or induce the modes to behave like a more effective cartel that provided many social-type services, such as special rates for agricultural produce, low passenger fares for the poor, service even at a loss to outlying communities without alternative means of access, and so on. These services could be financed by cross subsidy from profit-maximizing rates and fares on other traffic. Overall profits could be limited to some reasonable amount to retain an aura of respectability and attract additional private capital when needed. The whole procedure would impart a degree of stability, permanence and, it was hoped, adequate level of service that would keep costs low and passengers and most shippers happy.

Transportation is tailor-made for this type of regulation. Each firm is a multi-product enterprise. Railroads produce not only passenger service and freight but within these categories the shipments of each commodity and travel of each passenger class between each pair of points or origins and destinations, can be viewed as a separate submarket having its own more or less specifically assignable costs and demand function. The game is to decide which services should be provided at below or close to avoidable cost, for whatever public purpose seems relevant at the time. All other prices would be set to achieve enough profit in the aggregate over and above these losses or reductions in net revenue to yield a fair, normal or otherwise "reasonable" rate of return on the total assets devoted to transport.

This is a system of discrimination designed to accomplish selective social and economic purposes at least cost. Private ownership and operation are believed to ensure the latter while economic regulation implements the social purposes responsive to Congress which creates the agency, determines its objectives and often its *modus vivendi* as well.

As noted, transportation is a natural since it has all but one of the ingredients necessary for effective price discrimination, namely, markets that are readily separable and demand elasticities that differ substantially in each submarket. For example, rate differences unrelated to the costs of transport can exist for different commodities because shippers cannot convert a high rated good (say, finished automobiles or diamonds) into a low rated good (say coal) to take advantage of the lower rate. Thus, freight classification systems early emerged in rail transport with rates applying to what was being shipped. It did not have to be this way. Shippers could have offered

packages of "things" to be transported and have rates based strictly on weight and distance without concern for the contents of the containers (i.e. the specific commodities involved). Indeed there are some so-called FAK (freight all kinds) rates and there is now much containerized shipping. But rate structures developed around classes of commodities often finely distinguished because this was far more profitable since it permitted more extensive discrimination. Thus, rates are based upon commodities (their values, shipping characteristics such as density, fragility, etc.) and specific origins and destinations, thereby permitting a vast array of different mark-ups over cost. For each such movement there will be an elasticity of transport demand that depends upon the product of the elasticity of demand for the commodity in any particular market and the ratio of the freight rate to the delivered value of the commodity. Since commodity demand elasticities vary sharply, not only among commodities and in particular markets but also over time, and freight ratios do likewise, it is clear that *transport* demand elasticities are also highly variable and differ among the various submarkets. This permits substantial price discrimination or large differences in the mark-ups over computed marginal costs.

There is more to the story but the main point is that for suppliers of transportation services the opportunity to discriminate and hence become more profitable is uniquely available compared with most other producers. In addition, it can be argued that railways have more incentive to discriminate because of their cost structure and behaviour but that is yet another story.[48]

However, the foregoing suggests that only two of the three preconditions for successful price discrimination naturally exist in transportation. The third is the requirement of some degree of monopoly power. Without the ability to prevent entry of rivals in any market, it will not generally be possible to maintain a rate or price much above marginal or out-of-pocket cost without formal collusion. In this sense competition is said to be the great leveller. It forces all prices toward the marginal costs of the least-cost producer and precludes much discrimination. Although rails at one time had a large degree of monopoly power in numerous submarkets which permitted them to develop an elaborate classification system, this began to crumble and was extensively undercut by the development of bus and air passenger alternatives and especially trucks which could pick away at the upper end of the rate structure earlier put in place.

Maintenance of the discriminatory system in the face of growing shipper and traveller options, required that the common carrier segment of transportation be provided with monopoly power wherever possible through regulation or protected from freedom of entry into the high-yield submarkets. Thus regulation had to be tightened in the late 1920s and especially the 1930s to prevent the destruction of such discrimination. Regulatory policies restricting new entry into particular markets, specification of *minimum* rates and fares and other efforts designed to restrain competition were needed, not to protect the public as often believed, but rather to protect the carriers and especially the *system*. This would allow the implementation of a wide variety of social and other purposes unrelated to efficiency of production or allocative efficiency among modes or carriers. Regulation, if successful, would permit substantial mark-ups over cost in some submarkets that would provide higher net revenues. These in turn would allow much lower, and even below cost, rates and fares in other submarkets to effectuate some predetermined "social" or special purpose while maintaining private ownership and operation since overall revenues could, it was hoped, be made to exceed total costs by amounts yielding fair or normal rates of profit. Thus, cross subsidy in the absence of competition through regulation came to prevail in rail transportation and was even sought to be applied to bus, truck, air and inland waterway transportation.

The depression raised serious doubts about the efficacy of a policy based on competition and market forces. Indeed it is surprising that, with all the excess capacity resulting from the collapse of production and incomes, more cartel-like arrangements along the lines of the *National Industrial Recovery Act* codes of "fair" competition were not established. More surprising is that overtly socialist or communist measures involving widespread nationalization or more radical changes in the U.S. economy were not attempted. As it turned out, commission-type economic regulation was expanded within transportation and in various other areas as well. In fact the 1930s became the hey-day of the regulatory commission despite the dismal show put on by the ICC earlier. So strongly was there a perceived need to extend regulation that it was rationalized in terms of what was referred to as the "fourth" branch of government, alongside the executive, legislative and judicial. In a real sense, extended regulation was the U.S. alternative to socialism, communism and more detailed central economic planning at the microeconomic level. Keynesian economics later turned out to be the

alternative at the macroeconomic level. The former failed long before the latter although this was not recognized, nor were the linkages between the two appreciated until later in the 1970s.

So important are the 1930s in the evolution of United States transportation infrastructure and policy, that the changes that took place then and their cumulative effects became the focus of the attacks in favour of market forces of the 1960s. The remainder of this section will examine briefly the road to more effective cartelization and further retreat from efficiency criteria.

TRANSPORTATION INFRASTRUCTURE

The big change in infrastructure policy relates to the highways. The policy had been one in which limited federal aid was given to the states for predetermined roads and in amounts strictly limited by federal budgets. The states and local communities were expected to finance the bulk of total construction costs and all of the maintenance costs. There were even questions regarding the constitutionality of any federal aid to highways, a viewpoint that dates back at least to the days of Presidents Monroe and Jackson. Yet the logic of increased federal participation was inexorable. Without federal aid there could have been no national system of interstate highways, such as now exists, although even such a system was questioned as late as the 1950s and failed to pass Congress until President Eisenhower referred to it as the national system of interstate and *defence* highways. Beyond defence, the federal government also has a duty to promote the free flow of interstate commerce which virtually cried out for increased participation in the slowly evolving road system.

All this timidity concerning federal aid changed with the Great Depression. Federal caution on highway spending was abandoned. The economy had to be stimulated no matter what. Since this required increased spending, it seemed prudent to focus on something useful rather than strictly make-work projects. Throughout the 1930s, therefore, highway expenditures were part of the strategy to promote economic recovery. Federal aid was extended well beyond the confines envisaged by the highway Acts of 1916 and 1921. By 1936 the Chief of the Bureau of Public Roads could report about the previous three years that "all highway construction was administered with employment of those on relief rolls as the primary objective."[49] This enormous change in policy involved a massive increase in federal

outlays for roads, which rose from barely $94 million in 1930 to over $1,170 million during 1939. Some 80 percent of the total in 1939 consisted of special federal relief program outlays. By the end of the 1930s state and local governments supplied fewer funds for construction than they had at the beginning. The former relationship among federal, state and local governments, so painstakingly developed since 1916, had been thoroughly transformed as had the motivation for highway expansion. As a result, the nation emerged from the Great Depression with a vastly enlarged and improved highway infrastructure.

With this infrastructure, a thriving truck and bus industry arose. Our concern is not directly with the trucking industry except to the extent that it sharply reduced the ability of the railroads to continue subsidizing intercity rail passenger traffic to the point where they ultimately required relief which much later took the form of Amtrak and public subsidy. Competition from intercity bus lines and of course vigorous growth, even during recession, of private automobile travel made further inroads on the railways.

The trucking industry had another influence upon bus service since regulation of trucking was virtually demanded by the railroads after they became aware of the magnitude of the threat. Other interest groups, including the larger trucking companies, also demanded trucking regulation, complaining about excessive competition from irresponsible individual truckers who drove unsafe vehicles, were uninsured and otherwise reprehensible. Indeed, the trucking industry became a kind of "haven for the unemployed" who entered the industry in huge numbers buying some kind of vehicle on vendor credit, as a stopgap until other job prospects emerged. Such marginal operators were willing to carry any and all freight at rates down to or below out-of-pocket costs plus a limited amount for their own subsistence. The poor service and financial weaknesses of such operators did nothing to improve the shippers' image of the industry and gave even stable companies a bad name, reducing earnings to boot. Support for regulation of the trucking industry grew. Even an industry that possessed most of the technical features of being highly competitive was grist for the regulatory mill ostensibly to permit closer coordination and reduce the wastes of competition and instability.

On the other hand, the bus industry had achieved a high degree of stability by the mid-1930s possibly because of relatively greater railway involvement in helping create the large Greyhound system and somewhat more careful

state regulation because of the safety issue than applied to independent trucking. Most states sought to regulate bus transport as a public utility and reduced competition and new entry on many routes. Regardless of the differences, the attempt to provide the ICC with expanded powers to implement the "grand regulatory design" noted earlier, swept up both truck and bus transportation within the same legislation, examined in the following section. Suffice it to note here that the new highway infrastructure along with the previous and continuing advances in vehicle motive power, design, safety, speed dependability and comfort, utterly transformed the competitive and institutional structure of transportation in the U.S. Despite this transformation, the regulatory regime imposed was based upon the 1887 *Act to Regulate Commerce* and failed to recognize the structural differences between railroads on the one hand and bus, truck and air transport on the other.

Airline infrastructure also gave rise to virtually a whole new industry which now dominates the commercial provision of intercity passenger traffic. Unlike with rail and highways, the provision, operation and maintenance of the airway system are a function of the federal government and have been since the beginning. In the 1920s the U.S. Army engaged in aerial map-making and airmail experiments in conjunction with the Post Office. Congressional appropriations financed a system of radios throughout the country and developed a night airway system coast to coast before the end of 1926. The *Air Commerce Act* placed responsibility in the Department of Commerce to foster air transportation, developing and establishing of airports, civil airways and other navigational facilities. Responsibility was again transferred under the *Civil Aeronautics Act of 1938* which began the direct economic regulation of the airlines as well. The airways remain a responsibility of the federal government and subject to annual appropriations plus, more recently, receipts from airway trust funds analogous to the highway trust fund established earlier.

Airports are also publicly owned but usually by local or regional "port authorities." Although prohibited from building airports, the federal government nonetheless made funds available during the Great Depression from various public works and Works Progress Administration programs. Thereafter the *Civil Aeronautics Act of 1938* created a plan of regular federal participation which accelerated after World War II. Suffice it to note here that the infrastructure of this future strong competitor with rail long-distance travel received substantial federal assistance from the beginning including,

in the early days, direct mail pay subsidies for airline operations and, of course, enormous support in developing airplanes and preparing them for the transition from military to civilian and commercial.

Airline passenger growth was very rapid in the 1920s and continued throughout the Great Depression. By 1930 the number of airline company passengers had risen to 383,000 from 48,000 in 1928. The number passed one million in 1938 and reached about four million in 1941 before the war curtailed civilian travel.[50] Rail passengers averaged over 450 million during the 1950s[51] so quantitatively the impact was insignificant. Qualitatively, the picture was different and became far more so after World War II.

Finally it should be noted that while road and air transport infrastructure and its use had expanded enormously, that of rail shrank both in mileage, mostly of branch line abandonment, and certainly in use. The latter was only temporary as World War II was to change all that if only for what was to be a fleeting interlude.

TRANSPORTATION POLICY

With the tremendous increase in transportation capacity in all modes due to the severity of the decline in aggregate demand, and government investments in non-rail infrastructure, public policy concerned itself with preventing further price declines and in fact trying to engineer price increases to prevent profitability from disappearing altogether. This is understandable since macroeconomic policy was then unheard of. In fact this approach had at least one element of macro policy, namely, that if profitability could be restored, private investment might be stimulated which would expand output and also employment. The inconsistency here was not perceived. Why would firms, even if restored to profitability by price increases, expand capacity when there was already too much of it and how could the prices be maintained in the face of increased output? However, the prevailing philosophy was that competition was excessive and had to be carefully controlled. This required extensive expansion of regulatory powers in those industries already regulated, namely, transportation under the ICC and power under the Federal Power Commission, and extension of regulation to other industries as well as pushing the NIRA codes of "fair" competition everywhere else as part of President Roosevelt's New Deal program.

Even before the depression, people had been encouraged by the effects of business-government cooperation during World War I and especially the Railroad Administration's success at unravelling the congestion and improving coordination among the carriers. The era of "scientific" management had already arrived. In addition, Thorstein Veblen's emphasis upon giving power to engineers to run the industrial plant in the interests of physical coordination, production of "serviceable" products and efficiency, a form of technocracy, rather than businessmen seeking profits, created something of a stir, as did Veblen himself.[52] The point is that the reaction against markets not only took the form of reemphasis upon regulation and its extension but on the importance of "experts" on the regulatory commissions who had intimate knowledge of the industry just as engineers would know more about production than businessmen. Furthermore, since the regulatory goals of the firms would not be maximum money profits, production decisions would be less concerned with mere pecuniary values than with producing real, tangible commodities that were serviceable. The expert-dominated commission became the ideal. Commission-type authorities spread beyond transportation and power to other areas and included the Securities and Exchange Commission, the Federal Communications Commission and the National Labor Relations Board.

As noted, these sentiments predated the Great Depression but were vastly enhanced by it in attempts to protect business from unprecedented overcapacity. "The same premises that underlay the Keynesian revolution in macroeconomics — that government should take a hand, that expert public servants were more likely than business executives to choose the wise course — also applied to microeconomic regulation."[53]

The arguments in favour of regulation and especially industry-specific regulation by a small group of people with special knowledge or expertise about the industry were not only economic — that is, justified by market failure, economies of scale, the so-called "wastes" of competition, natural monopoly, large-cost indivisibilities necessitating discriminatory pricing, the need to promote the industry and the like — but also political.[54] The extension of regulatory authority was rationalized in terms of need, inevitability and legitimacy — the "fourth" branch of government. While the role of government in an industrialized economy must increase, the existing branches of government — legislative, executive and judicial — were not designed to cope with it and its drive toward monopoly power and general cyclical instability. The rise of a specialized administrative branch was therefore

a logical next step in a political democracy. The general argument is not unlike that used by Japan to justify and rationalize the activities of the Ministry of International Trade and Industry (MITI). Indeed the kind of "guided capitalism" in the form of industrial policy that MITI exemplified in its early decades closely parallels that of the "grand design."

REGULATORY EXPANSION

The ICC, after acquiring additional authority from the *Transportation Act of 1920,* sought to extend it even further as the motor carrier threat loomed larger. It was not however until 1935 that the *Motor Carrier Act* was passed which extended the Commission's authority to regulate the trucking industry. The Act became part II of the *Interstate Commerce Act.* It had been strongly supported by the Commission, the Federal Coordinator of Transportation, the railroads and the larger organized trucking firms, but opposition from motor vehicle manufacturers, shippers and small truckers fearing that regulation would restrict the industry in favour of railroads held it up for many years even after the depression was well under way. Most economists opposed it on grounds that the motor carrier industry was about as far from a natural monopoly as could be conceived. Entry was easy, fixed costs were low, vehicles could readily be shifted to accommodate traffic flows and adjusted to total business, no scale economies were evident, and so on. But the economists' hour had not yet come. The grand design needed to be tried. So the Commission took under its wing an industry almost the complete opposite of the railroads.

The ICC's workload burgeoned. By November 1, 1936, there were some 86,000 applications for certificates and permits, one half of which were protested; over 53,000 tariff publications; almost 17,000 schedules and 2,000 contracts filed. The Commission was swamped. In addition the Act required fine distinctions to be made among common, contract, exempt and private carriage, what constituted an "agricultural product" since these were exempted from regulation, and so on. More important, the Commission had to determine what the "inherent advantages" were of truck vis-à-vis rail and how to "preserve" them.

As if this were not enough, the *Transportation Act of 1940* gave an already swamped and confused Commission jurisdiction over coastwise, intercoastal, inland and Great Lakes common and contract water carriers in interstate and foreign commerce! All of this and more was bestowed under the statement

of national transportation policy noted in Section I and also noted for its ambiguity, inconsistency and requirement to meet the "needs of commerce, of the Postal Service and of the national defense."

There was some discussion about placing air transport under the ICC's jurisdiction as well but a certain amount of common sense prevailed and consistent with the regulatory mania, a new commission, the Civil Aeronautics Authority, (later Civil Aeronautics Board) was created in 1938.

By 1940 therefore the ICC had been granted abundant authority to rationalize or coordinate the several modes of transportation, except for air, and including both freight and passenger transportation without distinguishing between them. The Commission had been powerless to do anything in the face of the depression. It certainly could not guarantee rail profitability, the rule of rate-making notwithstanding, and was unable to obtain much in the way of inter-railroad coordination or cooperation either even under those critical circumstances. It was now enjoined to seek rail-truck-bus-water, etc. integration. During the 1920s, the ICC had performed dismally. Having failed to lead for over 20 years, the future did not look propitious no matter what authority the agency possessed. The "grand design" for an important segment of the newly rationalized "fourth" branch of government did not appear to be in very good hands unless some more enlightened and energetic commissioners could be found.

The outlook for the newly formed CAA was more propitious if only because it seemed to start with a blank slate and fresh faces. However, the principles expressed in the new Act were like those of the *Act to Regulate Commerce* of 1887 and the recently passed *Motor Carrier Act*, namely "the usual system of economic regulation" as the Senate Committee on Commerce explained. This meant that the industry was to be treated as a public utility currently subject to excessive instability, cut-throat competition, inadequate earnings and the usual excuses for bringing regulation to bear. In this case of course, as with rail, trucking and the bus industries, the major problem was the Great Depression. Few industries or even firms outside of transportation fared very well nor could be expected to do so in the presence of enormous excess capacity. What is not so evident, is the degree of undesirable instability that might have occurred in more prosperous and less unusual and turbulent times. However, when recovery came about there was ample opportunity to test the feasibility of the regulatory regimes put in place in transportation. This was to come after World War II.

4. World War II to the *Transportation Act of 1958*

Massive increases in federal government expenditures, mostly in preparation for the war then raging in Western Europe, occurred in 1939 and accelerated rapidly following U.S. entry into the war after December 7, 1941. This was the stimulus the economy needed. Real GNP surged by almost 8% per year during 1939 and 1940 and by 18% per year through 1944 — incredible growth rates by contemporary or indeed any standards. Such growth of course was possible because of the enormous excess capacity during the depression. The unemployment rate fell from a whopping 25% during 1933 to less than 5% in 1942 and below 2% for the next three years. It was as if the country were a coiled spring waiting for some catalyst to let it loose. The war did so with a vengeance.

Such dynamism had enormous impacts on almost all aspects of the economy and society but few more dramatic and positive than on railroads. On the verge of almost total financial collapse in 1938, rail tonnage and revenue records were broken during 1942, 1943 and 1944. Passenger revenues hit an all-time high in 1944 and the passenger deficits turned into substantial surpluses during 1943, 1944 and 1945. Railroads carried "97 percent of troops and 90 percent of army and navy supplies moved within the United States."[55] The railroads were indeed riding high. Part of this was, however, due to curtailment of competition. Because of fuel and equipment shortages, truck and private car travel was sharply curtailed. Bus traffic increased somewhat but civilian air travel was virtually eliminated. No wonder the public, industry and the military flocked to the railroads who literally never had it so good.

The euphoria for the railroads was short lived. The end of the war meant an end to massive troop and armaments movements. The dismal passenger service was well remembered by those subject to it during the war and when restrictions on air and automotive travel were removed and production of new and improved planes and cars began, people and freight left the rails in droves. The long steady relative freight decline resumed with the rail share of total ton-miles falling from 62 percent in 1939 to 49 percent by 1956 and continuing thereafter.

Even more dramatic was the resumption of the *absolute* decline in passenger traffic. Almost monotonically, passenger-miles fell from 95 billion at the wartime peak in 1944 to barely 23 billion in 1958, with a further steady

decline to less than 11 billion in 1970, the year before Amtrak. The number of passengers fell almost as dramatically. More significantly, rail passenger traffic became minuscule in proportion to total intercity passenger-miles, including private automobiles, falling below four percent and a diminishing share of common carriage already down to less than a third by 1958. The war years were but a brief upward blip, a mere interlude, in the long-range decline of both rail freight and especially passenger traffic.

More significant for the railways were the burgeoning passenger deficits which reached alarming highs of over $700 million by 1957. Despite more or less valiant efforts of the railways to employ more sophisticated and better equipment and upgrade service quality, they were no match for the service quality-cost alternatives provided by automobiles and airplanes, assisted to be sure by a public sector prone to concentrate large amounts of resources steadily into improvements in their respective rights-of-way. Intercity rail passenger service seemed doomed to chronic unprofitability.

The railroads did give the passenger business a decent try in the post-war period, much better and more sustained than the "streamliner" gimmick of 1934. But the passenger business is different from freight, and since it was producing negative net receipts while freight traffic was at least somewhat profitable, and since passenger traffic had traditionally been viewed as a by-product, often expensive but occasionally exotic in some aspects of its service, there was little more that could have been expected from rail management. There is no evidence of deliberate downgrading of service to induce customers to stay away because until 1958 there was no certainty that states, which had sole authority over discontinuance, would permit abandonment. In fact there was much evidence to the contrary.

However there came a point after which, despite some real efforts by management to change the cost-quality options, the profit prospects seemed hopeless. The Hosmer Report, examined below, also concluded that the passenger decline could not be attributed to rail management hostility or indifference, arguing that in fact they had made a "noble" effort to preserve the service out of pride and public obligation, but that even a marginally profitable outcome was hopeless.[56] At that stage and having dissipated much of the huge wartime surpluses in attempts to improve service, the railroads threw in the sponge and simply let service and equipment deteriorate. This phase provides most of the anecdotal evidence of deliberately

poor service, rudeness of personnel, indifference and so on.[57] Hilton is probably correct when he notes that "by 1958 railroad passenger service had demonstrated itself to be the most uneconomic activity ever carried on by private firms for [such] a prolonged period."[58]

ICC POLICY

From 1940 when the Commission was given substantial authority over all modes of transportation except aviation, and presumably had developed some concept along the lines of the "grand design" noted in Section III, nothing positive was done until after the war. During the war, President Roosevelt by-passed the ICC and created a separate Office of Defense Transportation (ODT), much as President Wilson had ignored the Commission in the earlier war, though not resorting to federal control. Apparently the Commission was not held in high enough regard to coordinate the transportation industry during either war even though it had jurisdiction over by far the largest proportion of transportation assets, and in the *Transportation Act of 1940* was charged with coordinating the transportation system. To be sure, Joseph B. Eastman was chosen to head the ODT but not because he was an ICC commissioner but because he was a man of exceptional talent and leadership abilities. His death in 1944 was a serious loss to the Commission since no commissioner "of comparable talents rose to take his place."[59]

It was not therefore until the post-war period that the Commission had the opportunity to see what it could do about improving the performance of the transportation industries through attempts to implement its grand design. The results speak for themselves. By the mid 1950s the railroads faced financial disaster again. Part of this was due to ICC policies that have regularly been viewed as inconsistent, vacillating, uneconomic and otherwise misplaced or foolish. I submit however that the Commission was attempting to implement a larger vision of the mandate of the *Transportation Act of 1940* than perhaps Congress had in mind.

Certainly the Act was interpreted by the Commission as involving a multiple set of objectives that made enforcement difficult. For example, the Commission asserted that in any important case it must consider the "economic effects on all shippers, on towns, cities, ports and regions, on the carriers themselves, and, of course, on the consumer"[60] in addition to the "needs of the commerce of the United States, of the Postal Service,

and, of the national defense" as the *Transportation Act of 1940* put it in its policy statement. Without having some notion of the Commission's relative weighing of these several objectives, it is not possible to judge its decision in any case. Worse still, since the Commissioners themselves have never provided any information on the importance they attach to any specific objective, it is clear that every decision is "justified" or justifiable under some set of weights that seemed to shift from case to case. Furthermore, there is no presumption that the objectives are economic in nature despite the adjective "economic" in the foregoing. Thus Commissioner Webb, in referring to the frequent use by the Commission of average costs containing many items that are arbitrarily averaged into any given figure and hence having no relevance whatsoever to what economists mean by "marginal" cost, explained that:

> the allocation of constant costs to specific traffic . . . is essentially arbitrary . . . There is no doubt in my mind that such fully distributed cost constructions are bottomed on economic fallacy. . . [But] this form of economic nonsense . . . may be entirely sound from a regulatory point of view . . . [because] regulation is designed to achieve a number of important objectives, the value of which cannot be determined on purely economic grounds.[61]

This non-economic aspect goes back to the beginning of the Commission. In its first annual report, the ICC stated that "[i]t was . . . seen not to be *unjust* to apportion the whole cost of service among all the articles transported, upon a basis that should consider the relative value of the service more than the relative cost [emphasis added]."[62]

There are complaints that the ICC "has been on all sides of the ratecutting question" because in one case it required rail rates to be raised "to match those of their river-truck competitors" while in another it asserted that "no carrier should be required to maintain rates which would be unreasonable, judged by other standards, for the purpose of protecting the traffic of a competitor," and in another case that "a rate should 'not be lower than necessary' to secure a fair share to traffic." These decisions do not mean inconsistency,[63] rather they reflect ICC's multiple objectives. Higher rates above rail costs may be justified on the grounds of protecting the traffic of other common carriers to keep them in business in the event of defence needs and to preserve their "inherent advantages." Rates closer to costs

but still compensatory may be justified in competitive situations if they retain or attract traffic from less regulated or exempt carriers.

Any rate change is bound to have differential effects on ports, other carriers, consumers, national defence and so on depending upon the situation of the specific case. Thus it is unfair to castigate the Commission for its case-by-case approach and failure of enunciate a uniform policy applicable to all cases. To be sure, the Commission's approach creates a lot of confusion and uncertainty as to the outcomes of any case. This also causes much delay, as well as income for lawyers and consultants of various kinds as each case is explored in all of its dimensions by all interested parties. Most of the delay is a product of the legalistic approach required by the *Administrative Procedure Act* (1946) but it is also implicit in the ICC's view that each case is virtually *sui generis*.

The Commission supported legalization of railroad rate bureaus which finally became law over President Truman's veto in 1948. In many ways the ICC sought to have the common carriers, regardless of mode, behave like a multi-enterprise cartel dedicated to the public interest though still under private ownership and management but influenced by regulation administered and interpreted by the ICC. In specific situations involving rail and truck competition, the Commission would apply a "share-the-traffic" criterion if the bulk of the rail and truck traffic involved common regulated carriers and would prevent rate competition that would jeopardize the net revenues of either mode. On the other hand, if there was actual or potential non-regulated (private, exempt or even contract) carriage, the Commission would permit the more regulated carriers to slash rates to levels barely above out-of-pocket costs if necessary, in an attempt to maintain at least some profitable *common* carriage in the particular business.

This was all part of a vain attempt to prevent the steady, increasingly evident erosion of regulated common carrier traffic to private, own-account, exempt or less regulated business. Other attempts involved increasingly rigid definitions over what constituted permissible non-common carrier status, such as reducing the number of contracts allowed to a contract carrier before its status became de facto "common" and hence subject to the full panoply of ICC rules and regulations; narrow definition of exempt commodities under the agricultural or bulk commodity exemptions in the laws applicable to truck and water transportation; and the extreme

"poisoned vehicle doctrine" that held that any specific *vehicle* that had ever carried an exempt commodity was forbidden from ever again carrying non-exempt freight!

The totality of Commission activities between 1940 and the mid 1950s suggests that interpreting the vision as a "Grand Benthamite Design"[64] or simply "grand design" as mentioned earlier sheds some light on what the Commission did or was trying to do. The argument goes as follows:

> Rate regulation as practiced by the ICC, if completely effective, would maintain higher rates on specific traffic than would otherwise occur, would involve greater rigidity, tend to preserve a demand-oriented rate structure, reinforce misapplication of value of service pricing but emphasize commodity discrimination as the most effective way of covering the nonassignable costs, frequently allow more than one mode to participate in a given piece of business regardless of relative costs, consider a wide variety of noneconomic objectives and externalities, treat each case as *sui generis*, more effectively prevent rates from falling below marginal cost, and would force a kind of public accountability and greater cost consciousness upon the common carriers. Insofar as one can impute rationality to contemporary regulation, the overall impression is that the Commission seeks a rate structure such that all nontraceable costs including those additional costs arising from pursuit of noneconomic objectives and the added duties of common carriage are recouped from shippers on the basis of willingness and ability to pay; that is to say, the markup over computed out-of-pocket costs would be determined by the relative level and elasticity of the demand for transport of particular commodities. Individual rates would be adjusted from the maximum profit level by consideration of external economies and diseconomies as far as regulated carriers are concerned and overall profit limitation is implied. Rate regulation, if completely effective, thus attempts, albeit in a crude and implicit way, to assess the benefits to the regulated carriers as a group and weigh these against whatever externalities appear to emerge in particular instances. It is true, of course, that, unlike Bentham, the ICC does not explicitly add up the net benefits to each shipper, carrier, and community involved or affected and then strike the balance, approving those rate changes for which the sum of the net benefits exceeds zero and disapproving all others. But the frequent

> references to injury or noninjury to some shippers, regions, defense interests, or other carriers due to proposed rate changes, suggests that an interpretation of rate policy in terms of Bentham's felicific calculus may not be so farfetched as it seems on the surface.[65]

Granting for the moment that this was the (mostly implicit) vision that derives from ICC actions, it still does not exempt the Commission from charges of failure to promote coordination among the modes. Nor is it exempt from charges that its activities, however well-intentioned, did little to preserve common carriage. In fact, it helped reduce common carriage which in many respects had become somewhat obsolete anyway. It is also true that the railway situation would probably not have been significantly different regardless of the Commission's actions. The forces of technological change that so improved the operations of the railroads' principal rivals and the massive support given by the federal government for right-of-way and technical development of the vehicles, especially aircraft and its close association with the military, would have led to the relative demise of rail freight traffic anyway and the absolute demise of passenger traffic too, in fact much sooner, had efficiency criteria prevailed or been influential earlier. Nor can one avoid the conclusion that the "grand design" was enormously wasteful in economic terms, of which more later.

THE WEEKS REPORT

In any event by the mid-1950s another rail crisis loomed. Since part of the railroads' problem was associated with regulatory policies of the ICC about which something might be done, President Eisenhower appointed a Presidential Advisory Committee on Transport Policy and Organization with Sinclair Weeks, the Secretary of Commerce, as chairman. It was popularly referred to as the Weeks Report.[66]

The Report, released on April 18, 1955 was primarily about railroads and freight. However three of its main items have relevance to passenger travel by rail and other means and indeed were influential in the *Transportation Act of 1958*.

Two views prevailed at the time concerning what to do about transportation policy in general:

(1) extend the authority of the ICC because much of the malaise was the result of incomplete jurisdiction. In passenger travel, the Commission had no authority over aviation, private transportation by auto and intrastate bus travel. In freight, regulation was complete over rail but barely one third of truck ton-miles and between 10 and 15 percent of inland water transport were subject to ICC regulation. For more complete coordination, it was argued, exemptions from regulation needed to be reduced. This applied mostly to private and exempt trucking where the Commission regularly tried to construe the extent of exemption narrowly. This approach was obviously mostly favoured by the Commission itself and those who believed that more regulation was essential to sustain common carriage, a transportation system constantly prepared for defence and a stable, dependable and ubiquitous system regardless of concerns for costs or profitability. In short, transport was viewed as a kind of public utility, available at most or all times between most or all places. It was a kind of entitlement and the "right to mobility" something akin to one of the basic freedoms.

(2) the other approach was to rely more on market forces and progressively strip the regulatory commissions of their authority. This was based upon two main premises: one, that the transport revolution over the past 50-plus years had rendered transport markets for both people and goods sufficiently competitive that public control, beyond the antitrust laws, was unnecessary and, two, that even if this were not totally the case, the existing system of regulation was so cumbersome, costly, unwieldy and unfair that it ought to be scrapped anyway.

The Weeks Report had elements of both of these views. Recognizing that the 1940 statement of national policy had been interpreted by the Commission as a directive to allocate traffic among carriers on its own discretion rather than via market forces, the Report stresses that a veritable transport revolution had taken place. "The net result is a competitive system . . . that has eliminated the monopoly element of . . . some thirty years ago." However, government has kept "and in fact, intensified its regulation." The Report therefore came down strongly in favour of "increased reliance on competitive forces . . . in rate-making," one of the first of such utterances to emanate from a prestigious government source.

However, the Report could not break away from the past completely and recommended that rate competition take place only within a range

determined by the ICC. This kind of ambivalence persisted throughout; namely recommendations that would permit a more market-oriented approach on the one hand while, on the other hand, strengthening or broadening the scope of regulatory authority. For example, to help maintain, however artificially, a common carrier industry, recommendations were made to narrow the extent of exempt and private carriage in trucking. Defence issues also loomed large with great stress placed upon maintenance of excess capacity which involves an inconsistency since reliance upon competition would preclude persistent excess capacity. It is impossible to maintain a strong competitive common carrier industry and excess supply in the event of hostilities unless the excess is kept out of commercial competition which is not the tenor of the Report.[67]

The main aspects of the Report and the resultant *Transportation Act of 1958* of relevance to passenger transport include those items placing more reliance on market forces and those moving further toward regulatory control. The latter would tend to preserve rail intercity passenger service and the former reduce it. The Report stressed that "losses incurred from passenger service . . . must be borne from earnings realized from freight service. . . . Thus railroad shippers . . . are being required to subsidize . . . those who benefit from the utilization of passenger train services." This was a strong plea to place rail passenger abandonment in the hands of the ICC and away from the states and make the Commission decide when such deficits impose an "undue burden upon interstate commerce." This was a tepid move toward market forces since it did not permit discontinuance upon the showing of unprofitability alone but dragged in concerns of "undue burden." Ironically, the original draft of the *Transportation Act* had provided that any demonstrably unprofitable passenger service might be discontinued. The removal of this provision for reasons relating to fear of elimination of suburban services in New York City, left the ICC without any specific criterion and, thus, free to decide such issues in conformity with its "grand design." On the other hand, recommendations for more rate freedom, even if only within a range specified by the Commission, would stimulate profits from freight shipments which would then permit continued subsidies to passenger service. Recommendations for federal loan guarantees for portions of rail plant and equipment purchases were also proposed and, other things being equal, this non-market effort would help support perpetuation of deficit passenger service.

Thus the Report was a mixed bag *en route* to liberalizing regulation. The resultant regulation in 1958 was equally mixed. Hilton, after an exhaustive study of it from the perspective of 10 years later concludes:

> two provisions . . . move in the direction of market allocation of resources. Section 15a(3) [prohibiting umbrella rate making] is a halting effort at decartelization, and to the extent that Section 13a accelerated withdrawal of passenger trains, it furthered the working of market forces. Unfortunately, such benefits as society achieved from these provisions were to some degree counteracted by the Act's two provisions which tended in the opposite direction: the guaranty of loans worked contrary to market forces for disinvestment in a declining industry; and the motor carrier provisions were . . . a straightforward extension of cartelization.[68]

THE HOSMER REPORT

Howard Hosmer was an ICC examiner who was directed in 1956 to look at the rail passenger deficit and suggest ways to eliminate it or at least reduce it to tolerable levels, presumably in the hope that present arrangements might continue or that feasible alternatives to preservation might be found. Clearly the crisis stage had been reached. As the ICC Report one year after Hosmer's put it:

> The financial loss [from deficits] is real; it is large and appears to be growing; and it endangers the present and future welfare of the railroad industry. . . . [I]f this threat to realization of the objectives of the national transportation policy is to be substantially lessened, responsible efforts in this direction must reckon with facts as they are. If the statistical trends of 25-odd years prove any one thing, it is the folly of awaiting more fortuitous events. Though many people still prefer to travel by rail for one reason or another, they clearly constitute a minority — a minority that grows smaller with each passing year. Figures for 1958 show that for the first time in the 70 years of recorded history of the American railroads, their passengers numbered less than 400 million. This decline has occurred against a background of an expanding population with more time, means and the desire for travel. In terms of intercity passenger-miles, the 'travel market'

increased almost 60 percent from 1940 through 1957. Though the total 'for-hire' share rose by slightly less than 9 percent, railroad passenger-miles declined 27 percent.[69]

There was certainly little time to lose. Though the ICC Report was in large part based upon Hosmer's, nevertheless it refused to accept his conclusions. Wishful thinking triumphed again when the Commission concluded that "We are of the view that the complete elimination of passenger-train service would not be a solution in the public interest. Economic railroad passenger service is . . . essential for the Nation's well-being and defense."[70] The Commission then enunciated 10 measures to somehow "save," and/or render economical, rail passenger service — only one of which was ever implemented: the 10 percent federal excise tax on passenger fares was repealed — not exactly a radical move. Nor did anyone suggest that even if all the measures had been implemented "economical" service was possible. Hosmer certainly thought not. We turn now to his analysis which is of relevance today.

After looking at the size of the deficit, he disposed of arguments that it was arbitrarily overstated by noting other studies arguing that the reverse was true. He deftly accepted the Commission's earlier finding that the figures, though based upon somewhat arbitrary but reasonable rules for separating expenses between freight and passenger operations "were adequate for the purpose for which they are intended," and turned to their causes.

On the demand side, he noted that the public at large had exhibited a distinct preference for air and automobile travel. Since the typical age of a rail passenger in 1958 was over 45, the bulk of the shift away from rail entailed more youthful riders whose future habits were unlikely to include rail after having become accustomed to the superior quality of the alternatives and who had by then gotten over any fear of flying associated with earlier air travel. Data at the time also suggested that the future of rail demand was severely limited because of several elasticity estimates which indicated that income elasticity for air and automobile travel was plus 2.5 and 1.2 respectively whereas that for rail was a *negative* 0.6. With rising incomes especially true in the United States of the 1950s and 1960s, the demand for rail intercity passenger service could expect to drop absolutely while increasing rapidly for its rivals. The rise in incomes also increased the value of time for travellers, especially business travellers, which generated even

greater relative advantage to air travel and frequently to automobile and bus as well. As Hilton put it, "Only low-income people, persons with an irrational fear of flying, or aged persons whose alternative uses of time are negligible are likely to opt for rail."[71]

On the cost side, Hosmer argued that rail transport was more labour intensive than its competitors and less subject to productivity improvement. These facts, combined with the stringent operating rules applicable to rail labour, would make their cost disadvantage even greater, thereby further accelerating their overall demise. As if to bear out Hosmer's analysis, a study in 1966 indicated that rail costs per passenger for a 45 percent load factor between San Francisco and Los Angeles were between $18 and $25 whereas the air fare was less than $10 on one of the airlines and slightly over $9 by Greyhound Lines.[72] Since the rail fare had to lie somewhere between the other two because of perceived relative travel preferences, rail losses were inevitable, especially at the actual fare of $12.50.

Thus, given the apparently inexorable or, at least, most likely trends, the rail intercity passenger business was economically hopeless. Hosmer stated this without equivocation:

> For more than a century the railroad passenger coach has occupied an interesting and useful place in American life, but at the present time the inescapable fact — and certainly to many people an unpleasant one — seems to be that in a decade or so this time-honored vehicle may take its place in the transportation museum along with the stagecoach, the sidewheeler, and the steam locomotive. It is repetitious to add that this outcome will be due to the fact that the American public is doing about 90 percent of its traveling by private automobile and prefers to do so. . . . If the railroad passenger-miles (other than commutation) continue to decline at the average rate of reduction between 1947 and 1957, the parlor and sleeping car service will have disappeared by 1965 and the coach service by 1970. . . .[73]

The latter projections were almost precisely on track if one dates a new era for intercity rail passenger service in the U.S. from the formation of Amtrak in 1971 and the demise of most luxury services five years earlier. At least for the existing railroads, passenger service died as predicted.

Thus, on the eve of obtaining authority over passenger-train discontinuance, the Commission had at hand an analysis that would have provided an appropriate guideline for policy. This it chose to reject. While in the years following the *Transportation Act of 1958* many passenger trains were allowed to be dropped, the procedure was more prolonged, painful and costly than would have been the case had Hosmer's Report received the attention it deserved. The hopes of implementing the "grand design" more effectively despite such evidence presented by Hosmer of the power of market forces to effectuate change, made the Commission continue, like King Canute, to order the waves rolled back. Thus the railroads, despite growing rates of abandonment begrudgingly granted by the ICC, continued to suffer passenger losses ranging from a low of $375 million to a high of $524 million and averaging $426 million per year from 1959 through 1970.

THE SITUATION IN AIR AND HIGHWAY TRANSPORT

While the railroads were having their problems and suffering from low earnings overall and continued miserable passenger performance, air and private travel reached new heights while bus service limped along. Economic regulation of air seemed at the very least to have accommodated such growth and perhaps helped it along marginally. Certainly public policy with respect to infrastructure mightily assisted all three. These issues will be briefly examined here in reference to the period before the heavy artillery was brought out to begin the attack upon the regulatory commissions in transportation following the timid beginning with the *Transportation Act of 1958* and the Weeks Report which were not even discernable salvos.

Air Transport

The growth of the commercial side of air transport was phenomenal. Employment in the industry increased from a mere 13,000 in 1938, the year of regulation, and by 1958 exceeded 150,000. Revenue passenger-miles leaped from barely half a million to over 31 billion between these years and carrier revenues from $58 million to over $2.2 billion.[74] Rate of return on investment for the carriers averaged over 10 percent per year during the 1950s.

The airway development proceeded apace without charge to users and with direct subsidies linked to mail pay administered by the CAB from 1953 to deregulation in 1978 and directed mostly to carriers serving small

communities. Airport development has accommodated and partly stimulated air traffic and carrier profits since state authorities and local governments generally build, maintain and operate the facilities at fees that normally do not cover operating costs and certainly not capital costs. In the new environment these implicit and explicit subsidies are being phased out.

Carriers acquired vast amounts of new and higher technology equipment. Ironically, in the year of the Hosmer Report and the *Transportation Act*, both of which involved the future of passenger travel by rail, jet aircraft were first introduced on domestic airlines thereby making Hosmer, at least, appear even more prescient. Newer, faster, more fuel-efficient and sometimes more comfortable aircraft have been introduced with singular rapidity ever since. The industry has been technologically extremely dynamic, perhaps too much so. In part the new technology improves quality of flight and this may have been excessively stimulated because the CAB early on adopted the policy of virtually eliminating rate competition among certificated carriers, forcing competition to focus upon the quality dimension. However, replacing an aircraft fleet with another more expensive before the first has been fully financed or paid for has often caused financial problems for the airlines along with fluctuating net earnings.

Suffice it to say that up until roughly 1960, U.S. airlines were dynamic, profitable and comfortable with both public *largesse* and direct economic regulation. In fact under the latter, no new trunk-line carrier had been allowed to enter the industry since the beginning of the CAB. Of the original 16 carriers in 1938, 10 continued to dominate the industry in the early 1970s, the other six having merged with the remainder. The CAB clearly "out-regulated" the ICC and in an industry where the workability of competition vastly exceeded that of railroads. Perhaps the earlier demise of the CAB in its entirety is just desert for cartelizing a workably competitive industry presumably in the public interest and after large amounts of subsidy seeking to promote it in the first place. The public paid at both ends.

Highway Transport

Bus transportation had not shown much dynamism through the 1950s. In fact, total intercity bus traffic (class I, II and III carriers) decreased slightly during the decade in terms of passenger-miles and fell behind air for the first time in the mid 1950s and, of course, has remained behind since. It

continued to dominate in number of passengers however, indicating the very short average length of trip, some 122 miles in 1983 and below 100 miles or less during the 1950s. The clientele come mainly from low income, non-professional groups, the relatively aged and very young, and whose travel purpose is primarily visitation of friends or relatives and sightseeing. These features seem to have characterized bus travel from the beginning and certainly since World War II, which probably accounts for part of the lack of dynamic growth of the number of passengers and passenger-miles over time.[75]

The chronic high level of monopoly power in the industry may also have contributed to its sluggish level of output and relative decline. Although the operating units are such that a competitive structure would be expected to emerge, both early state regulation and federal regulation as part of the *Motor Carrier Act of 1935* succeeded in creating a high degree of concentration especially in a single company, Greyhound, which dominated the industry for over 60 years. Along with Trailways, the two companies accounted for over half of all intercity carrier bus-miles and over 60 percent of total industry revenue in 1976 and similar proportions in the earlier periods. It is an understatement to assert that "concentration is overwhelming in the bus industry."[76]

Obviously for some submarkets or city pairs there may be effective rivalry from other modes, but in general it appears that regulation has helped to fashion another cartel out of a potentially workably competitive industry although there is no evidence that, following deregulation, the competitive nature of the industry has changed. The industry has simply not exhibited any signs of innovative development or dynamic growth even though its clientele has grown and presumably the number of tourist trips as well. There has been limited technical change in the basic vehicle and a pretty steady relative shrinkage in share of total intercity passenger-miles to insignificance. Regulation has also led to some cross subsidy with local service deficits being made up from small surpluses in intercity service including express and other incidentals.[77]

Unlike rail passenger traffic, the bus industry does not appear to be destined for extinction. Although rates of return have decreased in recent years, they were not completely negative during the 1950s. Nor has the trend been downward for other indicators except in a relative sense. For thousands of

small communities, buses provide the only commercial access and egress and are of the sort that may well be suited to the non-business, non-professional patrons' needs, especially the elderly.

In the meantime private highway automobile travel continued to burgeon after the war. Fuel rationing ended, tires became available once more, Detroit geared up its formidable production apparatus and highway expansion and improvement went ahead with a vengeance culminating in the beginning of the Interstate System under President Eisenhower. Intercity auto travel rose from 383 billion passenger-miles in 1949 to 706 billion in 1960, and from 85 percent of the total to more than 90 percent. Automobiles improved markedly in styling, comfort, convenience and, to some degree, in safety and fuel economy during the 1950s although there was much more emphasis upon these later.

But the big events were the highways themselves. The National System of Interstate and Defense Highways, the "Interstate System," was created by the 1944 *Federal Highway Act* but funding for it was not approved until 1956. Two more highway Acts in 1956 set the system at 41,000 miles, later extended to 42,500 miles, and authorized new methods of financing both the Interstate and other federally aided systems. The Interstate is one of the largest public works endeavours in history. Ninety percent of the system is funded by the federal government and while its length only constitutes about one percent of total U.S. highway mileage, it accommodates over 20 percent of all highway traffic and connects virtually all cities (with populations of 50,000 or more in 1956) with limited access, multi-lane roads. The federal role also covers the ABC Program which includes primary and secondary highways and extensions into urban areas. The federal share of construction costs for this more extensive coverage began at 50 percent in 1956 but was raised to 75 percent in 1974, still somewhat below the 90 percent for the Interstate System. Overall federal expenditures for highway construction cover about 20 percent of the nation's total street, road and highway mileage.

A most significant aspect of the *Highway Revenue Act of 1956* was its creation of a Highway Trust Fund into which federal taxes associated with highway use are placed and the total each year allocated for the construction of federal aid highways. Before the passage of this law, highway expenditures had been paid from general revenues which included receipts from a wide

variety of taxes, levies, fines, fees and other sources of income to the federal government. The share that went to highways was then bargained for in a political process referred to as the annual budget. The trust arrangement, under which some or all of the proceeds of excise taxes on motor fuel, tires, tubes, as well as sales of cars, trucks, buses, trailers and heavy vehicles accrue to the fund, and total expenditures for construction are limited to such amounts per year. This is believed to have the advantage of assuring funds for future use since such tax receipts can be forecast with more accuracy than political bargaining over budget allocations on an annual basis. More important for efficiency purposes is that it provides a linkage between highway use and highway outlays. Since economic efficiency requires that prices charged for the use of publicly or privately provided rights of way should reflect their respective marginal social costs, this linkage is at least a step in the right direction.

For example, the favourable economic outcomes resulting from a largely procompetitive transport policy, require that suppliers of transportation services, as all other producers of goods and services, pay the full costs borne by society in producing such outputs. Even if the production of the output is for personal use, such as own-account automobile traffic, if the full costs of such production are not paid by the producer or immediate beneficiaries, economic waste will be the result. The producer, or in this case, the automobile user will have no incentive to "economize" on the number of trips made if each trip is not charged an amount reflecting the value of the resources used in making it. When using a commercially provided service, there will obviously be a cost involved to the user, namely the price or fare charged. But for an efficient outcome, this price must also reflect the value of all the resources used in providing the service that could be used to produce something else of value.

In the case of intercity traffic by highway, the issue of highway pricing or user-charges is of critical importance. If, for example, heavy trucks pay less than the costs they incur or impose, more freight traffic will move by highway than rail, other things being equal, which will create more highway congestion. This will raise costs for all highway users including cars, trucks and buses and will reduce quality (e.g. slower speed, more accidents, pollution, etc.). More accurate cost-based pricing for highway use might shift some traffic back to railroads and reduce highway congestion and pollution along corridors heavily used by trucks not paying their marginal social

costs. Clearly, a viable intercity commercial passenger bus industry as well as private automobile users have a large stake in an efficient system of highway user-charges. The railway industry has historically complained about federal and state subsidies to trucks and buses by virtue of under-charging them for the costs of using the publicly provided rights-of-way and thus creating a competitive disadvantage. For the sake of efficiency within the entire transportation industry, both passenger and freight, a set of at least reasonably plausible, cost-occasioned user-charges is indispensable.

A properly designed fuel tax supported by licence and registration fees for vehicles, trailers and other highway user types, can come tolerably close to what is meant by marginal social cost. Indeed, this tax itself is a kind of synthesized price for highway services. It is not of course easy to determine the economically correct level of taxation nor the correct value of marginal cost for each segment of the overall highway system. There are many conceptual, empirical and analytical problems involved. But acceptance of the principle of linking specific taxes to variable highway costs will provide incentives to improve and sustain such a linkage especially in the context of a separate trust fund. It is in this sense that the creation of the Highway Trust Fund in 1956 has such an important set of implications for any policy that places greater reliance upon market forces. Highways themselves are productive assets and should be priced appropriately. The U.S. highway system represents a huge investment, and its use, expansion and improvement needs to be made on economic principles as long as we live in a world of relative scarcity because the resources used up on highways have alternative uses whose value exceeds zero.

CONCLUSION

The post-war period through the 1950s saw significant further improvements in air and road infrastructure and a large expansion in use. The principles of more economical finance at least of highways were recognized and set into law. One could even see the glimmer of emergence of market orientation in economic regulation but not much. Yet in the background was a growing agitation among academics to change the system. Many others were becoming alarmed at the periodic crises that seemed to arise in all modes of transportation but mostly in rail. Debates were begun about what to do about it. Transportation, in short, began to rise in the national priority list of areas that needed attention.

5. Evolution of Pro-Competitive Policies: 1960–1982

The two decades beginning in 1960 saw the increasing strength of the regulatory reform movement and their ultimate achievements. These consisted of complete success in eliminating economic regulation in the airline industry along with the CAB itself, substantial deregulation of railroad, truck and waterway freight transport, elimination of most restrictions on bus passenger traffic and the removal of rail passenger service from the railroads themselves and integration of the service into a single, government-created organization called the National Railroad Passenger Corporation (Amtrak). Amtrak was given much discretion over fares and service but was also heavily subsidized and thus indirectly "controlled" by the government. The ICC remained in existence with sharply curtailed functions and authority although it managed to keep busy with aspects of the freight business that on the surface were surprising. Thus for example, the *Staggers Rail Act* that "deregulated" rail freight invited the carriers to discriminate in rates in a fashion that had led to the original Act in 1887 in the first place. Discrimination was supposed to be necessary to make the carriers "revenue adequate" and initially was constrained within a range of certain percentages above out-of-pocket cost (or marginal cost) for particular traffic. The Commission was to determine when carriers were "revenue adequate," what constituted marginal cost and make other findings such as "market dominance" as well. In short, the ICC was to preside over a government-mandated system of discrimination previously declared illegal. Clearly all was not as many economists had envisioned, and parts of the regulatory reform "victory" seemed hollow indeed. But the main point was that efficiency criteria were given primacy in most cases and that individual carrier discretion was vastly enlarged. Even discriminatory freight rates could be viewed as efficient when carriers were subject to an overall revenue constraint. A theorem, now called "Ramsey pricing," first developed by the eminent economist Frank Ramsey in 1928 and widely ignored by those economists unable to see anything beyond the marginal-cost-equals-price condition for efficiency, proved that for multi-product firms subject to a revenue constraint, prices which deviate systematically above marginal cost on the basis of the inverse of the elasticity of demand are optimal in the consumer surplus sense. Even the ICC pretended to espouse Ramsey pricing in a series of early cases after 1980 but, of course, could not do it correctly for reasons that need not be pursued here.

Regulatory reform of passenger business was virtually complete. The airlines, which carried almost 84 percent of commercial intercity passenger miles in 1980, were provided with most economic freedom which they had fought tooth and nail for over a decade. Passenger buses, accounting for about 11.5 percent of passenger-miles, were significantly deregulated while a single-firm monopoly, Amtrak, generated the remaining trivial amount. Thus well over 90 percent of intercity passenger transportation in the U.S. was, by the early 1980s, influenced almost totally by so-called "free market forces" in most of the relevant submarkets, namely, city-pairs. Certainly the goal of greater reliance upon market forces had its fullest expression in passenger transportation as compared with freight.

However it took over 20 years in the U.S. after the beginning of strong attacks upon the then existing commission-type regulation to bear fruit despite the ardent support of every president since Eisenhower. Even Eisenhower was sufficiently upset with the existing arrangements in transport to have called forth the Weeks Report which noted the end of the previous transport monopoly since 1920, talked about obsolete regulation and urged "Increased reliance on competitive forces of transportation in ratemaking."[78]

Economists, political scientists and other academics and the legal profession had likewise begun the attack in the 1950s and some much earlier. The procedures of regulatory commissions, in transportation and elsewhere, were severely criticized leading to passage of the *Administrative Procedure Act* (1946) which specified the requirements for fair hearings for all affected parties — a set of rules that was so abused by various regulatory commissions, including the CAB and to a lesser extent the ICC, that docketed cases took an average of almost three years to decide and many important cases took far longer. Regulatory delay became a basis for advocating reform long before 1960.

Before 1960 many observers had noted the decline in the apparent quality of regulatory Commissioners. No new Joseph B. Eastman arose in the ICC and the last CAB chairman before Alfred E. Kahn was described as the "worst ever." Not only were the Commissioners of poorer quality and often "political appointees" in the worst sense of that term, but their frequently cozy relationships with the presidents of the carriers regulated led to the widely held "capture" theory and questioning of just how "expert" and "independent" the Commissioners were.[79]

Thus the attacks upon regulatory commissions began much earlier than 1960. But the *nature* of the attacks shifted from procedures, internal operations and organization, venality and quality of the commission and its staff and the like, to the *effects* of whatever the regulatory agencies did upon the industries they were supposed to be regulating in the public interest. At this point, a bevy (perhaps "pretension"?) of economists turned their attentions to transportation once again as they had prior to 1930. As noted in Section I, the economic consequences, when properly advanced both in theoretical but especially in empirical terms, caught the attention of Congress and all the presidents since Kennedy. The present section outlines this story and seeks to explain both how anti-regulation forces finally succeeded as well as they did and why they took so long.

We begin with one of a series of reports and messages that tackled the problems of U.S. transportation and sought to provide solutions that would lead to sensible change. The change could take several forms: it could be new legislation mandating specific changes in the basic regulatory statutes and/or it could be changes by the commissions themselves in interpretation of existing law. For example, some years before legal changes were passed by Congress, both the ICC and CAB began to significantly alter past practices mostly in response to the ground swell of opposition to the *status quo* but also to avoid new Congressional mandates. It was said that deregulation of trucking occurred almost four years before the *Motor Carrier Act of 1980* because the ICC allowed almost every application for new entry into hitherto heavily protected markets starting in 1975-76. The CAB began urging new rate initiatives and permitted easier entry even before Chairman Kahn arrived on the scene which was several years before Congress passed the actual deregulation bill. Discussion of which approach is preferable will be deferred until the regulatory reform story has been examined.

THE DOYLE REPORT[80]

This report, appearing in June 1961, shortly after the Landis Report had castigated regulatory agencies in general (see below), gave a further set of criticisms directed at the regulation of transportation, arguing that the "framework of present regulatory policy . . . has produced *a general program of preserving the status quo which is in direct opposition to the overall objective of a dynamic transportation system which can best serve the economy and defense of the country* [emphasis added]."[81] The Report

then emphasized the essentiality of preserving common carrier service as the backbone of the system and stressed the need for regulation because "transportation partakes of the dedicated nature of public utilities. . . . [It is] in the public interest that a degree of stability and uniformity be introduced in the rate structures of the several modes . . . that at no time in the course of our review . . . have we found any serious recommendation that specialized regulation of transportation be discarded."[82] In particular the Report stressed that intermodal cooperation is desirable but that it cannot come about through voluntary means because there are "too many carriers . . . each promoting his own immediate self-interest . . . too much mutual distrust and antagonism."[83] Thus the desired amount of coordination "will have to come about through regulation or as a result of permitting ownership of one mode by another."[84] Even though the latter is to be encouraged and the Report so recommends, regulation is still needed.

On the general issue of deregulation and pro-competition, the Report takes a large step backwards. Thus, for example, it argues that "With the exception of farm to first market and certain possibly noncompetitive traffic . . . exemption from regulation of for-hire transportation is contrary to national long-range interest."[85] Indeed it seeks through appropriate regulation to achieve "the right amount of competition" and that this will "minimize the cost of transportation to our economy"[86] and lead to rates that reflect long-run marginal cost. Competition, on the other hand, will not "tend to produce rates closely related to long run marginal costs" and there are sound and "logical reasons for concluding that competition in transportation rate-making will not automatically tend to bring rates and costs into a close relationship."[87] Such relationships require a rate *policy*; that is, rate regulation. These kinds of statements buttressed by much argument in an otherwise rather thorough and well-conceived report, help explain why the movement toward policies stressing "greater reliance upon competitive forces" became so protracted in the U.S. Its study director was a rather well-known and prominent economist who should have known better.

The Report, while a little weak on the economics of inter and intra-modal rate competition, nevertheless is all-encompassing. After careful analysis of the specific issues, it made such recommendations as:

- more careful assessments of user charges for the already existing highways;

- the creation of an airway trust fund which is now in existence;
- creation of a Department of Transportation *mainly to coordinate public transportation investments* with apparent need to prevent excess capacity;
- development of a waterway trust fund and full user-charges for use of the publicly improved waterways despite contentions that they were to be "forever free," a contention which the Doyle Report labels erroneous and misleading;
- a careful assessment of urban transit problems;
- encouragement of transportation companies, as noted above;
- enlargement of motor carrier operating rights and so on.

Labour problems in transportation are discussed which usually are ignored. Many other detailed analyses of aspects of current policies that it sees as causing malaise for common carriers of freight are included.

However, in addition to urban transit problems, the Report also addresses intercity passenger transportation which is more directly germane to this essay. It notes that "Railroad intercity passenger service meets no important needs that cannot be provided for by other carriers, . . . possesses no uniquely necessary service advantages . . . [and] serves no locations which cannot be served by air or highway;"[88] it can only earn a place by "offering a combination of price and convenience which will attract business in open competition at full-cost fares."[89] The Report believes that so oriented and operated only in high-volume markets, some intercity passenger traffic could survive or at least "produce a far higher ratio of revenues to expenses."[90] The causes of the demise of this service include rail management apathy and unwillingness to pool equipment and services to reduce duplicate facilities. This in turn is related to the lack of "effective profit-responsible management of this service."[91]

To be sure, regulation and government creation of excess air and highway facilities have not helped. Yet the Report feels that all is not necessarily lost. "If this service goes to the museum with the stagecoach [as the Hosmer Report predicted], it will not be for the same reasons."[92] If existing management is incapable of overcoming "the problems of equipment interchange, trackage rights, financial realignments, managerial realignments and eliciting

the reasonably unified cooperation of over 80 companies, *a national railroad passenger service corporation should be considered* [emphasis added]."[93] This more or less prescient proposal was however not to be implemented unless a recommended study indicated potential profitable operations based on conservative traffic and financial forecasts.[94]

This Report, coupled with the Landis Report to President-elect Kennedy, led to some administrative and procedural changes within the ICC and CAB which amounted to very little. Nor did the Report lead to new legislation possibly because its coverage of topics was so extensive, some of its recommendations exceptionally offensive to trucking and waterway interests, and parts of the analysis purporting to justify continued rate regulation were out of step with the times as well as analytically slipshod.

However, it represented something of an advance over the Weeks Report, continued the attack on the transportation regulatory agencies and reinforced the need for change. It was also a creature of the U.S. Senate and indicated a growing concern in that body for regulatory reform.

The Landis Report, noted above and in Section I, although not focussing upon the transportation agencies exclusively, kept the heat on all the agencies and indicated serious concern from the White House as well as Congress. Specifically, James Landis, who once developed the rationale for a compelling need for regulatory agencies, the "fourth branch of government," in the 1930s, now engaged in a merciless dissection of the agencies' failures, possibly out of a sense of betrayal of his regulatory ideal.[95] Emphasizing the appointment of weak, vacillating and non-expert commissioners during the Truman and Eisenhower years, the problems of capture and especially delay, the absence of any general policies for particular problems combined with the multiple impacts the agencies felt they had to consider,[96] the absence of concern for efficiency and so on were all highlighted.

Regulatory reform began to shape up as a leading issue in the first year of the Kennedy administration. While no new legislation was passed, the appointment of superior and highly motivated people to such agencies as the SEC, FCC and FPC led to intra-agency shakeups along similar lines that Alfred Kahn was to follow in deregulating the airlines. If Landis could complain in his report to Kennedy that "the fires that then [1930s] fed a passion for public service have burned low," Kennedy helped reignite them in the

early 1960s. But alas, it was far more than inadequate personnel that ailed economic regulation of transport — it was the entire foundation and rationale for regulation and its increasingly costly consequences that needed change.

PRESIDENT KENNEDY'S MESSAGE ON TRANSPORTATION[97]

The assault on transportation regulation continued when, by inadvertence, President Kennedy *ad libbed* during a speech that he was going to deliver a message to Congress on transportation in the near future. Nothing of the sort had been previously discussed.

Released on April 5, 1964, the message was "Hailed as the most comprehensive transportation proposal a president ever submitted to Congress."[98] Written by economists both within and outside the government, it bristled with concern for efficiency, low cost, economical service and so on. Noting that "pressing problems are burdening our national transportation system" and that existing regulations are a "chaotic patchwork," Kennedy argued that "less Federal regulation and subsidization is in the long run a prime prerequisite of a healthy intercity transportation network." The national policy required, among other things, that "the resources devoted to provision of transportation service should be used in the most effective and efficient manner possible; and this, in turn, means that users of transport facilities should be provided with incentives to use whatever form of transportation . . . provides them with the service they desire at the lowest total cost, both public and private."[99] This objective required unsubsidized, privately-owned facilities operating under the checks of competition to the maximum extent possible and reduced regulation. Users should also bear the full costs of both publicly and privately provided facilities. To move toward these goals, he recommended extension of certain commodities now exempt from all rate regulation for water carriers (bulk commodity exemption) and for motor carriers (agricultural and fishery products), to all carriers. Congress was invited to enact legislation to *limit the control of intercity passenger rates to the establishment of maximum rates only.*[100] And so it went on to recommend "consistent policies of taxation and user charges" even for waterways; even-handed government promotion of intercity transportation mostly by phasing out subsidies; careful scrutiny of large mergers to maintain as many shipper and traveller options as was efficiently feasible; encouragement for establishing through routes and joint rates; and general stimulation of

experimental rates, fares and services. Beyond intercity transportation, there is a long section on urban transit, one of the first of its kind and a major section on international transportation — neither of which are germane for present purposes but which do indicate the scope of the message.

It received wide press coverage and was greeted with much enthusiasm. However nothing came of it in terms of legislation. It lit a few more fires for dedicated public service and furthered the cause of transportation reform but it evoked substantial and powerful opposition. For example, a bill proposing exemption from minimum rate regulation for intercity passengers and transportation of bulk commodities and fishery products was opposed by the ICC, the American Trucking Associations, the International Brotherhood of Teamsters, the Association of Motor Bus Operators, the various waterway associations and many other groups. The grounds for opposition were mainly that equalization among modes should move in the direction of *greater* regulation of all of them, not less. The Association of American Railroads, the U.S. Chamber of Commerce and various agricultural, coal and shipper groups supported the proposals but only if they were amended to retain the exemption for the railroads in their minimum rate-making from the operations of the antitrust laws, an amendment rejected by all the other groups noted above who opposed the bill in the first place.

Legislation designed to implement other parts of the message evoked similar opposition. None ever got out of committee. The anti-deregulation forces were more powerful than recognized up to that time. There was widespread belief, especially within transportation circles, in the ICC's statement in opposition to the bill:

> If transportation teaches any one thing, it is that while competitive forces generally are effective in reducing prices and improving standards of service, these very same competitive forces in the transportation field, unless subject to reasonable restraints, will result in eliminating competition and in disrupting reasonable and fair rate relations as between competing shippers, geographical areas and territories.[101]

This reflects and reinforces the view that in some sense transportation is unique, that it is vitally important, has enormous positive and negative externalities, and so on that require regulation of some kind beyond the

discipline of competitive markets. Even the Doyle Report had some of this attitude. Yet the sense in which it is unique is seldom spelled out. Certainly the cost functions of the various modes do not differ from those of most other industries. The fact that transport provides a perishable service is scarcely grounds for alarm in an economy where two thirds of GNP is generated by services rather than goods production. Nor are any of the modes "natural monopolies" in the sense of being subject to scale economies. Obviously air, motor, bus and waterway transport of people or goods are far from being naturally monopolistic. There is less assurance about railways, but for many decades the view that unit costs decline with volume of production of either passenger- or ton-miles was regarded as demonstrating economies of scale when in fact it represents economies of density — quite a different thing. Railroads are probably *not* subject to economies of scale. Even if they are, there are upper limits to any rate or fare provided by other modes so long as all markets are reasonably contestable by any company that is "fit, willing and able."

Sometimes the "uniqueness" theorem is supported with the observation that transportation is essential for all societies for a whole lot of reasons that are too self-evident even to mention. However, essentiality is not unique. Food is essential for life and food production in most economies is usually left to market forces or, if not, should be. Indeed, agriculture is viewed as the quintessential industry where market forces work best if governments refrain from mucking them up through price supports, acreage limitations and other intrusions. The same is true of health care, housing and other so-called necessities of life. None of them have been subjected to the same degree of protective, promotive and detailed intrusion into every aspect of the businesses providing them as transportation, especially in a free enterprise economy.

The economic virtues of private ownership, operation and decision making in response to profit opportunities, suitably constrained by competition and circumscribed by general rules of the game set down in law and subject to change via democratic processes, has been apparently vindicated by worldwide events of the last two years. Most assuredly this does not mean *laissez-faire* in the extreme sense. Even Adam Smith recognized legitimate and necessary roles and activities for governments. Some of these issues involving transportation will be discussed in Section 6. But some obvious ones may be mentioned here. They include antitrust laws to preserve

competitive options; efforts to eliminate negative externalities consistent with market processes such as making private and social costs coincide as closely as possible; and efforts to maintain full employment, steady growth and a tolerable income distribution. Changed conditions in transportation had created, long before the end of World War II, a set of circumstances which rendered the pre-existing regulations of the industry at best inappropriate and at worst far more costly than any discernible net benefits to society and the economy as a whole. This was the message that was left to the economists to present as forcefully as possible. Part of this required debunking the uniqueness theorem and with it the Grand Transportation Mystique.

The strength of the opposition to regulatory reform seemed rather surprising at the time (early 1960s) as did the failure of the Kennedy message, given his initial enormous popularity. What was not recognized was the extent of the vested interests that had grown up around the existing regulations. In addition to heavy Congressional lobbying by railroads over many years, joined by the increasingly powerful American Trucking Associations, the Teamsters Union and others noted above, there were considerable financial contributions to the campaigns for electoral office at all levels of government by the various modal and other interests concerned with keeping things as they were. This is, of course, standard operating procedure in the U.S. even though there have been constant attempts to control its abuses over the years. Nonetheless, it remains a powerful force for maintenance of the *status quo*. But in addition, the laws affecting transportation economic regulation were so complicated and subject to so many conflicting interpretations that an entire cadre of transportation lawyers for decades has made a very good living from representing transport firms before the ICC, CAB and the courts at all levels. With them, accountants, statisticians and economists were increasingly involved. Hundreds of private consulting firms have found their bread and butter in transport cases, litigation and simple hearings before administrative law judges.

Even when Congress thought it had changed the law, as in the *Transportation Act of 1958*, the ICC interpreted it in such a way as to imply that little had really changed. This was also true of parts of the so-called 3R and 4R Acts passed in the 1970s. The Commission's scope for interpretation was extremely broad and it used this to maintain the *status quo*. However, this had one possible advantage, namely that if new, reform-type Commissioners could be appointed, sensible changes might be feasible without new

legislation which took so long, required so much compromise, and even then was uncertain. Indeed, I once argued, prior to the legislation of 1980, that "there is nothing in the *Act to Regulate Commerce* as it now exists to prevent the ICC from doing any or all of the things that the proponents of regulatory reform recommend. The reason we have been forced to legislation is that the commission will not do them . . ."[102] If only it had been this simple! As many have pointed out, for any long-range guarantee that the reforms will stick, legislation is needed for the very reason it is harder to obtain in the first place. One can replace Commissioners with different viewpoints even if it takes a while (that is, at most one term if resignation cannot be induced or ill health speed things up) so that new administrations can easily re-regulate. Indeed, there is now a growing pressure for re-regulation in the transport industries in the U.S.

AFTER PRESIDENT KENNEDY

After President Kennedy's death in 1963, President Johnson accepted deregulation and the emphasis upon efficiency in transportation. While declaring the high importance of transportation reform he soon became obsessed with the civil rights movement and increasingly with the Indochina War. Unable to devote much time to transport, he nevertheless succeeded in creating the Department of Transportation (DOT), a long-time objective of many reformists and advocates of more coordination, which is to say, almost everybody. Thus, although sending a transportation message to Congress that emphasized the need to create a National Transportation Safety Board, to do more research on the SST and high-speed ground transport, and promoted transport coordination through a new federal department, only widespread, general support was forthcoming for the DOT, which began operations on April 1, 1967. Although not in direct opposition to the ICC, the DOT has supported regulatory reform and has made legislative proposals usually supported by the White House almost every year. Most got short shrift until the late 1970s.

Johnson's Council of Economic Advisers began a series of what were to become increasingly strident criticisms of transport regulation in each of its Economic Reports. Beginning in 1966, a section entitled "Efficiency in Transportation" was included. It advocated the DOT, of course, and discussed the role of competition in forcing rates toward marginal costs. But it was still partly in the regulatory mold. "While controls over entry and abandonment

are surely *desirable* [emphasis added]," it opined, "considerably more flexibility would seem to be appropriate."[103] This is pretty timid stuff but the beginning of another aspect of the attack on the transport *status quo* that continued fairly regularly and broadened in scope through the 1990 *Economic Report of the President.* What clout it had is difficult to say. In the 1960s, the Council of Economic Advisers had considerable stature, status and support of the President but its repute had dissipated by the 1980s. It was, however, only one facet of the economists' continuing attack on transport regulation. The attack was rendered far more powerful as economists were hired in ever larger numbers and quality in various branches of government.

THE ECONOMISTS' ROLE IN TRANSPORTATION REFORM

The 1960s ended without much in the way of regulatory reform. However, the economic case for it had been well prepared and increasingly documented since the late 1950s and throughout the 1960s. In very general and overly brief terms, the case involves two interrelated parts. The first is that since the 1920s at least, the technical changes in transport — namely the automobile, truck, bus and airplane, and the associated highway and airway investments and progressive improvements in all phases of these technologies — had created an enormous and growing supply of transport capacity alongside the earlier dominant railroads already suffering from overcapacity. Thus the potential competitiveness of transportation between most city-pairs was vastly increased. Virtually all such markets had a sufficient number of traveller and shipper options supplied by independent carriers to make competition at least workably competitive. At the same time, it made economic regulation incredibly complex if not virtually impossible. In short, regulation became impossible to perform with any degree of rationality, reasonableness or efficiency; at about the same time, give or take a decade or two, it became unnecessary.

The problems of regulating the "new" industries of highway transport (truck and bus) and airlines which used publicly provided, improved and maintained rights of way, with little evidence that particular users paid appropriate amounts for either the costs they occasioned by such use or benefits received, created sharp differences among the modes including the railways. Any attempt to regulate for competitive equity or even to discover, let alone preserve "inherent advantages," as the ICC was enjoined to do, was virtually impossible. The large number of firms brought under regulatory purview,

especially that of the ICC, with the necessity of making "grandfather" exemptions, exemptions for private carriers in motor transport and lesser regulation of contract carriage by truck or bus, vastly complicated the regulatory process. Meaningful distinctions among common, contract, exempt and private carriage are impossible to make and enforce. When certain commodities were declared exempt by statute, the situation became even more absurd. Court cases and much Commission time was expended on such trivia as whether frozen chicken is a manufactured or an agricultural, and hence exempt, commodity.

All the regulatory agencies became weighted down with trivia. Cases took years to conclude in part because of the new complexities but also because of the over-zealous use of "due process." The vastly different cost and demand functions relating to these disparate industries defied anything like a unified, basically anti-competitive approach that attempted to preserve something referred to as "common carriage," itself becoming increasingly obsolete and irrelevant with the new powers of own-account transport of people and goods. The ICC even used different profit concepts for rail and truck or bus, namely rate of return for the former and operating ratio for the latter. Even with enormous wisdom and administrative talent, the Commissioners could not cope with such a morass especially when the legislation they were operating under was vague, subject to a wide range of interpretation and in many respects inconsistent. But during the 1940s and 1950s and even later, Commissioners were appointed more frequently on political grounds and were distinctly inferior in their concern for and knowledge of the industries under their charge.

Given these considerations, the ability to carry out any grand Benthamite design was rendered worse than impossible. There was no way the Commission could possibly weigh the advantages and disadvantages to shippers, travellers, regions, ports, national defence, the needs of commerce and the Post Office in any given decision. Not only could the benefits and costs not be measured with any degree of accuracy but there was no weighting system that made any sense nor did the Commission ever reveal any systematic set of preferences except for common carriers. In fact, the weights seemed to vary from case to case. Thus the system collapsed for the same reasons that Bentham's felicific calculus collapsed — an inability to measure or weight the impacts using any standard metric that was additive. The Commission's decisions then became whimsical, without a

rationale that could even be used as a precedent in other cases because the relative importance of the several impacts upon the multiple considerations alleged to be considered varied from case to case. This was *sui generis* with a vengeance.

Although the CAB never adopted an apparent grand design of such scope, it ran into similar problems because it sought to create and administer a cartel, oriented to sustaining the profitability of the *scheduled* carriers over time. If the economy was buoyant and travel demand brisk, the Board could be more lenient in granting new services or increased competition on certain routes and even encouraged discount fares. On the other hand, when times were difficult and carrier profits threatened, the Board allowed few new entrants and discouraged price reductions contrary to what a market-oriented policy would require. Thus the policy seemed to fluctuate between pro- and anti-competitiveness depending upon the general economic situation. As has been noted, "The CAB usally was vigorously anticompetitive when the airlines were suffering financially, and it was relatively procompetitive when the airlines were prospering. Thus . . . CAB policies between 1938 and 1974 were a result of applying stable protectionist principles to changing economic conditions."[104]

Thus the Board could look as if it were not so flagrantly against competition from time to time even though it thoroughly applied controls over entry and competition for the benefit of a favoured few — the scheduled carriers. It was thus more able to carry out a more limited goal of seeking stable profits than the multiple goals of the ICC. Yet even with a single goal it was not very successful in creating stable earnings year after year and certainly not for each carrier. However, there were no bankruptcies among the majors. The airlines themselves favoured continued regulation, as did airline labour, among the highest paid in the country, and financiers of the industry. Despite the economic arguments about misallocation, excessive prices and costs, lack of price-quality options and other problems, there was little enthusiasm for deregulation of the airlines or for reducing significantly the regulatory powers of the CAB. Despite this, potential competition was constantly growing.

In general, regulation of transportation became increasingly complex, less effectively done or doable and less necessary as the competitive potential of transport markets grew. The "costs" of regulation began to exceed the "benefits" presumed to derive from it. Even the railroads came to support some deregulation by the late 1970s as their economic situation worsened.

Legislators heeded the deregulation cry when various economists began to calculate the costs of regulation. Such costs turned out to be enormous, between $8 and $16 billion in 1977.[105] Though based upon very flimsy assumptions which no one chose to question, they nevertheless caught the attention of legislators far more directly than generalized statements about the competitiveness of most transport markets and the supreme virtue and efficiency of market solutions over regulatory ones.

The task now became how to get these virtually unanimous conclusions about the need for transport regulation reform, something very rare among economists, out of academia and the professional journals and into the mainstream of policy discussion and decision making in Washington. This process was aided by several Washington "think tanks" including the Brookings Institution, probably the best of them all, and one or two others which sponsored programs of studies on economic regulation of business and produced numerous volumes, articles, pamphlets and conferences on the findings. Most of these were written or conducted by scholars in economics, political science and other policy-based, social science research. This helped capture attention in the right places for policy reform in transportation and gave experience to academics who would be appointed to government agencies also concerned with the issues.

Such agencies as the Council of Economic Advisers, the Antitrust Division of the Department of Justice, the Department of Transportation (after 1967), the Office of Management and Budget as well as presidential task forces and Congressional studies (such as the Doyle Report and the National Transportation Policy Study Commission of 1979) virtually gobbled up economists who evinced any talent and/or interest in the economics of reform especially if it were pro-competitive. Since the profession as a whole was pretty unanimous on this point, there were many economists available. As has been said, by "1970-71, there were enough active advocates of regulatory reform inside the government to constitute a small, informal community, loosely bound by personal acquaintance and commitment to a shared policy goal. What had begun as a random critique of government policies . . . in a decade had evolved into a moderately concerted effort with a substantial official and quasi-official base."[106]

Economists were now in a position to do something more than simply argue the case. At the centre of much of this activity was transportation since it was not only a large and important segment of the economy but the first to

have been subject to the kind of economic regulation now under attack and in which regulation had been hastily expanded to include railroads' competition thereby providing further ammunition for reform.

Almost from the beginning, the reform movement in transportation had support from the executive branch. Presidents Kennedy, Ford, Carter and Reagan gave high priority to it as did Johnson and Nixon, although the latter were unable to spend much time or effort in the cause.

However, to obtain the desired legislative change required sympathetic understanding from Congress. For a variety of reasons, the issue of transport reform, especially of air and truck transportation, was taken up in the early 1970s by the most publicized Democrat and one of the most powerful Senators in the legislative branch, Edward M. Kennedy. His advocacy virtually ensured passage of the bills deregulating both airlines and motor carriers. The story of airline deregulation and Kennedy's role in it will be told later in this section.

One more ingredient was needed to get legislation passed. It had to be shown that without it there would be dire consequences for the nation. Transportation had to become a high-priority item on the national policy agenda. However, the 1960s did not indicate much of a crisis. Rail passenger deficits remained high but stayed below their peak levels (which averaged $680 million in the seven years before the *Transportation Act of 1958*) averaging about $420 million per year from 1960 to 1970 as the ICC accelerated abandonment. (See Table 2.) There seemed to be no railroad "crisis." Airlines were doing quite well, buses continued their unspectacular but not dismal performance and the economy was progressing nicely with low unemployment rates, and better than average economic growth. Although fears of inflation led to a tax surcharge in 1968 and the Vietnam War had occasioned urban riots, campus uprisings and a souring, contentious mood throughout the country, transport problems, when thought about at all, were far from uppermost in public perception. Invoking the admonition "If it ain't broke, don't fix it," there seemed little point in using up political or other capital to tackle the problems the academics saw in transport. "Thus procompetitive regulatory reform was well and widely articulated as a policy prescription; but it remained a solution in search of a widely perceived problem . . ."[107]

Table 2

Output and Financial Performance of American Railroad Passenger Service, 1920–1970

Year	Passengers (thousands)	Passenger-miles (thousands)	Net revenue[a] (thousands of dollars)	Passenger deficit as percentage of freight net revenue
1920	1,269,913	47,369,906		
1921	1,061,131	37,705,737		
1922	989,509	35,811,046		
1923	1,008,538	38,294,178		
1924	950,459	36,368,290		
1925	901,963	36,166,973		
1926	874,589	35,672,729		
1927	840,030	33,797,754		
1928	798,476	31,717,566		
1929	786,432	31,164,739		
1930	707,987	26,875,642		
1931	599,227	21,933,345		
1932	480,718	16,997,426		
1933	434,848	16,368,635		
1934	452,176	18,068,635		
1935	488,059	18,509,497		
1936	492,493	22,459,781	–233,327	26.2
1937	499,688	24,695,214	–241,591	29.2
1938	454,508	21,656,918	–255,263	40.8
1939	454,032	22,712,941	–250,934	29.9
1940	456,088	23,815,598	–262,058	27.8
1941	488,668	29,406,250	–226,029	18.5
1942	672,420	53,747,029	89,329	—
1943	887,694	87,924,994	279,790	—
1944	915,817	95,662,501	234,103	—
1945	897,384	91,826,353	230,060	—
1946	794,824	64,753,699	–139,736	18.4
1947	706,551	45,972,245	–426,526	35.4
1948	645,535	41,224,319	–559,782	35.9
1949	556,741	35,133,300	–649,627	48.6
1950	488,019	31,790,470	–508,508	32.9
1951	485,468	34,640,031	–680,822	41.9
1952	470,979	34,033,245	–642,390	37.3
1953	458,252	31,678,951	–705,538	38.9
1954	440,770	29,309,861	–669,533	43.4
1955	433,308	28,547,877	–636,693	36.1
1956	429,994	28,215,728	–696,938	39.5
1957	412,625	25,914,446	–723,483	44.0
1958	381,623	23,295,262	–591,543	35.7
1959	353,647	22,074,718	–523,692	32.8
1960	327,172	21,284,084	–466,289	32.9
1961	318,359	20,308,444	–390,495	29.7
1962	313,084	19,926,466	–374,993	25.2
1963	310,999	18,519,049	–378,618	23.7

Table 2 (cont'd)
OUTPUT AND FINANCIAL PERFORMANCE OF AMERICAN RAILROAD PASSENGER SERVICE, 1920–1970

Year	Passengers (thousands)	Passenger-miles (thousands)	Net revenue[a] (thousands of dollars)	Passenger deficit as percentage of freight net revenue
1964	314,386	18,271,322	–389,008	23.7
1965	305,822	17,161,776	–398,029	21.6
1966	307,530	17,162,776	–379,744	19.5
1967	304,028	15,264,172	–460,414	26.9
1968	301,372	13,163,541	–462,129	25.8
1969	301,673	12,213,983	–437,498	24.4
1970	289,469	10,785,746	–449,579	26.2

Sources: Interstate Commerce Commission, ***Statistics of Railways in the United States; Transport Statistics in the United States;*** James C. Nelson, ***Railroad Transportation and Public Policy*** (Washington, D.C.: The Brookings Institution, 1959).

a The ICC did not separate passenger and freight net earnings before 1936.

The crisis to advance regulatory reform was not long in coming. Indeed in three successive crises or at least serious and widely perceived events, transportation in general and railroads in particular were catapulted into the limelight between 1970 and 1973 (a light they shared with Watergate and the 1972 elections). The first of these was the Penn Central financial collapse in 1970, four years after the ICC had approved the merger of the New York Central and the Pennsylvania railroads and two years after the Supreme Court had finally sanctioned it. The Commission's approval was an obvious mistake not only for commercial reasons, as the bankruptcy shortly thereafter confirmed, but for reasons of sensible public policy. For example, as I wrote to a colleague shortly after ICC approval in 1966 under the heading, "Reflections on the N.Y.C.–Pennsy Merger";

> The approval of this merger by the ICC clearly flies in the face of predominant thinking with respect to deregulation, rate freedom, and increasing reliance on competitive forces in transportation. The foreclosure of intra-railroad competition over the vast area encompassed by such a merger should give those advocating reduced regulation occasion for some second thoughts. Whatever one may think of the possibilities of intra-railroad competition and its potential effectiveness, it cannot be lightly discarded as a totally inconsequential force. The

> entire philosophy of increased reliance upon competitive forces presupposes the existence of competitors having roughly similar cost and service characteristics. Intermodal competition, to be sure, is vital and in general ubiquitous within regions but to increase competitive effectiveness, intramodal competition is also essential. Thus the issues of rate freedom, deregulation and mergers must be viewed as a whole. Cartelization of any large area of potential competition requires more effective regulation of rates, fares and service, not less. Thus, the failure of the Commission to consider the broader picture in this instance jeopardizes any future move in the direction of deregulation. A cynic may even be led to infer that the Commission fully recognized this and approved the merger so that the necessity for more regulation, and with it the future life of the Commission itself, would be assured.
>
> To be sure, perhaps the estimated $80 million in savings will be achieved through elimination of duplicate facilities and all that. But against this must be set the dissavings that might be involved if the present regulatory system is thereby reinforced and rendered more impervious to change. I would guess that $80 million is peanuts compared to potential savings through substantial deregulation.[108]

Many people were incensed at the merger and frightened that the bankruptcy in 1970 would lead to liquidation. The combined roads constituted over 20 percent of total U.S. rail traffic and served a region of the country, the Northeast, that comprised 17 states and limited portions of other states, which accounted in 1970 for almost 60 percent of total industrial production and almost half the U.S. population. Any forced liquidation or even serious interruption of Penn Central service would have severe national impacts.

The second event, not unrelated to the Penn Central bankruptcy (possibly the most investigated and written about corporate failure in U.S. history) was the so-called Northeast Railroad Crisis. Referred to as "One of the most significant transportation occurrences of this century,"[109] it involved the bankruptcy of seven more railroads in the Northeast.

By this time the country, the Congress and the President were well aware of the railroad situation, its possible impact upon the nation as a whole and to a lesser extent how the causes were related to some more fundamental underlying malaise facing the entire transportation system. Out of these

problems arose several legislative actions, in 1970 alone. The *Emergency Rail Services Act of 1970* was a financial bailout, in the form of loan guarantees by the government (that is, the Secretary of Transportation) to permit operations of Penn Central and other financially strapped railways to continue. More important for present purposes, the *Rail Passenger Service Act of 1970* created the National Railroad Passenger Corporation (Amtrak), to remove the burden of losses from cash-flow poor railroads already in bankruptcy. The Penn Central alone is reported to have absorbed nearly one third of the total national rail passenger service loss — something it could no longer continue to do and which helped bring about its financial collapse in the first place.

There was clearly considerable fear and panic in the initial legislative responses to the crisis in the Northeast, especially the Penn Central situation. In fact another "crisis" situation, a one-day strike against the Penn Central and its bankruptcy court threatening a liquidation unless public funds were forthcoming, initiated a sequence of events that led to the *Regional Rail Reorganization Act of 1973*, the so-called 3R Act. Thus began a planning process that had been suggested as far back as the *Transportation Act of 1920* although now on a more regional scale. The earlier suggestion regarding planning had been ignored by the ICC. The results after two years of planning amid enormous infighting and litigation among government agencies, as well as involvement of the railroads and many other affected interests, were the establishment of the Consolidated Rail Corporation, Conrail, and an unprecedented legal situation by which the federal government had planned and implemented a mandatory restructuring of privately owned railroads. Cries of "unconstitutional" were widely expressed but later resolved. In all this, the ICC and rail regulation were ignored except for creating the Rail Services Planning Office (RSPO) as part of the Commission to help in the restructuring process.

In short, there was much crisis-oriented activity in attempts to respond sensibly to the twin crises of the railroads in the Northeast. The creation of two new quasi-government corporations, Amtrak and Conrail, the billions of dollars of bailouts (or, euphemistically, loan guarantees) or outright subsidies, obviously captured the public attention and clarified that there was much unfinished business with the U.S. transportation system as a whole including issues of regulatory reform.

But even these attention-getting events and their train of frenzied activity were upstaged by another more ominous occurrence in 1973. The invasion of Israel by Egypt and Syria on October 6, 1973 set off the so-called "Yom Kippur War." The results of this further evidence of implacable Arab-Israeli eminity induced a hitherto harmless cartel, Organization of Petroleum Exporting Countries (OPEC), composed of leading oil exporting nations, to ignore the private international cartel, composed of large petroleum corporations, and arbitrarily raise oil prices and embargo shipments of oil to the United States and The Netherlands, both active Israeli supporters. By January 1974 the price of oil was raised from about $3 per barrel for Saudi Arabian light crude on October 17, 1973, to $11.65 per barrel. This precipitated the first of the major supply-side shocks the world was to endure and come to fear for the next almost 20 years. It precipitated world-wide recession and was a turning point in world economic history as growth rates of all the then leading industrial nations slowed sharply and have yet to regain their pre-1973 levels.

But for our purposes the oil crisis, as it was often called, even though the world has abundant supplies of oil and is in no danger of "running out," focussed attention on the transportation industries. It was quickly calculated that in the early 1970s transportation accounted for over half of total domestic use of refined petroleum products and about one quarter of total U.S. energy consumption. Of this, automobiles and trucks accounted for about three quarters of transportation's energy consumption. U.S. imports of petroleum and products were less than $4 billion in 1971 and earlier. By 1974 they totalled almost $27 billion and increased to a high of almost $80 billion in 1980. OPEC had seriously affected the world trading system and helped engender chronic balance of trade and current account deficits for the U.S.

This was serious business and called for an energy policy to stimulate greater efficiency in the use of oil and its products which in turn focussed attention upon transportation as a major user. To no one's surprise, it was calculated that railroads were the most efficient users of fuel for freight transport by a wide margin. BTUs consumed per revenue ton-mile of rail freight were far below those of truck or air. For passenger-miles the efficiency differences were less striking, but surprisingly Class I intercity bus travel was most efficient, followed by Amtrak, private automobiles and aviation the least efficient. See Table 3 for 1983 estimates.

Table 3
Relative Fuel Efficiencies: BTUs Per Passenger-Mile

Class I Intercity Bus	1,018
Amtrak	1,765
Automobile	3,498
Certificated Air Carriers	5,490
General Aviation	11,044

Source: U.S. Department of Transportation, *National Transportation Statistics* (Washington, D.C.: Government Printing Office, 1983), pp. 121–27.

These data, even if completely accurate, do not tell the whole story. They say nothing about the quality differences among the modes and are heavily influenced by the load factors on average for the several vehicle or plane types as well as variations among vehicles and aircraft themselves. Crude as they are however, they do suggest that the most fuel-effective way of moving people between cities is by rail and bus. Thus Amtrak and bus transportation should be encouraged relative to cars and planes especially general aviation! A new argument was added to go along with nostalgia and pollution to justify attempts to retain and stimulate rail and bus intercity passenger travel options and use, even if they needed to be subsidized. The excessive use of automobiles and air travel should correspondingly be discouraged. The value of time, comfort and convenience should be reduced and there should be efforts to improve the fuel efficiency of planes and cars. Attempts along all of these lines have of course been made and need not be detailed here. What is important for this discussion is how the above three events from 1970 to 1973 affected U.S. passenger policy during the 1970 to 1982 period when the last of the reform legislation was put in place with President Reagan signing the *Bus Regulatory Reform Act* in November 1982. The solution had finally found a widely perceived problem by the end of 1973. All the pieces were in place for regulatory reform.

The following discussion is confined to the three major changes pertaining to passenger transportation: (1) airline deregulation that went farther than any of the others; (2) the less discussed deregulation of the intercity bus industry; and (3) the deviation in the opposite direction in the creation of Amtrak.

AIRLINE DEREGULATION

From a position of almost zero interest in even modest pro-competitive reforms in 1969 to ardent advocacy in 1975 represents a sea-change for the CAB and the Congress.[110] Of the several reasons for this rapid change, the first is rather paradoxical, namely an even more anti-competitive shift than before on the part of the CAB beginning in 1969, with the economic recession which carried over through 1970. The recession led to a sharp reduction in traffic at about the same time new wide-body jets, ordered several years earlier in anticipation of continuing high-traffic growth and route expansion, were delivered. The ongoing wage-price spiral inflated operating costs; financial costs were rising as well. The reduced profits and profit prospects induced the CAB to refuse all applications for new routes — a "route moratorium" as it was called. The Board also approved temporary capacity-limitation agreements among several large carriers to raise load factors, and further restricted scheduling and discount fare competition — a more perfect cartel was being formed in the face of a movement in the opposite direction. A new chairman even believed that these should be made permanent features of regulation!

The first oil crisis gave an excuse for fare increases and even more widespread use of capacity-limiting agreements (such as OPEC production quotas), ostensibly to save fuel. Profit margins recovered somewhat by mid-1974 about the same time the economy was falling into another recession, thanks largely to OPEC. The Board was thus seen as protecting one cartel while the country was suffering from the actions of another. This made it a prime target for change. Critics of regulation also benefitted from a minor scandal involving the Chairman of the Board who wanted to cartelize even further.

The hearings of Senator Kennedy began in February 1975 and provided a widely publicized forum for the economic case against continued regulation of the CAB type. The case was not especially abstruse and its critics had no substantive rebuttal. One of the more telling arguments showed fare differentials on intra-state, non-CAB-regulated carriers in California and Texas that were 50 to 60 percent lower than CAB-regulated fares for comparable distances in otherwise similar circumstances. The cut-rate fares had so raised the load factors for the intra-state carriers that it was highly profitable to charge them. The refusal to sanction rate competition had clearly denied the public the advantage of lower rates. As the Kennedy subcommittee

pointed out, Pacific Southwest Airlines "puts 158 seats in a Boeing 727-200 jet aircraft and fills approximately 60 percent of these seats on average. American Airlines puts 121 seats in the same plane and flies it on average 55 percent full. Thus, when flying PSA, 95 passengers must share the cost of flying the airplane, while, on an American plane, 66 passengers must share the same cost."[111] This was something anyone could understand and vividly indicated the benefits of more competition in rates.

In addition the hearings were sprinkled with the arguments that regulation leads to higher investment costs because carriers, unable to compete on price, seek the latest, fastest aircraft for competitive purposes and because of the A-J-W effect.[112] Higher operating costs occur because if the carriers cannot compete on the basis of price they compete on cost-enhancing amenities such as food, drink, movies, advertising, or gimmicks of one kind or another. In addition, other costs of opposing competitors' applications for competing routes or lower fares and the like as well as the trouble and expense involved in seeking permission from the regulatory body to do those things are not required in non-regulated or less-regulated markets. The loss of consumer choices regarding price-quality trade-offs that Freddy Laker was later to dramatize in transatlantic traffic, the extra costs of low load factors because of the failure to allow peak/off-peak pricing and so on were all trotted out and more or less "explained" to a public and a Congress suddenly aware that serious problems existed.

This was all reinforced by the powerful support provided by presidents Ford and Carter who made regulatory reform a major goal of their administrations. Airline deregulation had strong bi-partisan support.

Finally and not the least important were the chairmen of the Board, appointed by President Ford and President Carter. Ford's appointee became convinced that serious regulatory reform was essential. Carter's appointee, Alfred E. Kahn, who had been one of the leaders of the reform movement for years, was the first professional economist ever to serve on the Board. He was an eminent microeconomist and fully dedicated to reducing or eliminating much of the regulatory apparatus clinging to transportation and other industries such as power and communications. He had even written not long before his appointment what has become a classic book entitled aptly *The Economics of Regulation*.[113] Kahn was the right man in the right place at the right time with the right support to persuade not only the Board and its staff,

a process already begun before his arrival, but as a witty, energetic spokesman for a cause with a solid analytical and empirical underpinning, he was able to convince many in Congress as well. He enjoyed wide popular support with the press and TV. The message they sent to the public also helped persuade Congress.

Much hard work was yet involved. But with strong bipartisan support from a Republican and a Democratic President and the leading Democratic Senator, legislation was prepared that even the industry, reluctantly to be sure, agreed upon or at least acquiesced to once convinced that some kind of reform was inevitable. In fact, substantial freedom of entry, encouragement of rate discounting and other breaks in the cartel-like arrangements of the previous Boards were instituted before legislation, some of which were of questionable legality. Under the broad terms of reference of the original Act, however, they seemed permissible although inconsistent with past precedents of the Board. Several carriers went to court to protest Kahn's initiatives. Passage of the *Airline Deregulation Act* in October 1978 ended these issues. The most sweeping deregulation bill to be passed up to the present, it was put in place, with several transition phases, one of which included the elimination of the regulatory agency itself, on January 1, 1985. This was the first and only "sunset" provision of any transportation legislation to date.

As far as intercity passenger transportation is concerned, the largest proportion of commercially offered service (some 90 percent of intercity passenger-miles) and the fastest growing segment had been relieved completely of economic regulation. This was accomplished with a speed and thoroughness that was totally unexpected even by those most ardently in its favour. Clearly this reflected not only a set of mutually favourable circumstances, but also recognition that deregulation, or at least regulatory reform, was an idea whose time had come. Just as the 1930s was the hey-day of the rise of regulatory commissions, so the late 1970s represented the time of their demise. This was at once a cheerful and sobering fact and one that haunts supporters at the present, some of whom fear a reverse trend toward some form of re-regulation.

BUS REGULATORY REFORM

The last of the transportation industries to yield to the reform movement was intercity bus transportation in 1982. The industry itself had none of the glamour of the airlines. Indeed in the U.S. it still has a kind of seedy

reputation typified by such stage and movie productions as "Bus Stop." Used primarily by the poor, indigent, aged, students and others unable to afford other means of travel and mainly where rail service is unavailable, it is the poor sister of intercity passenger service. The volume of its business did not change much between 1970 and 1990 for the nation as a whole, and the number of communities where buses once stopped appears to be dwindling rapidly from about 20,000 in 1970 to less than half this amount today.

Its share of intercity passenger-miles, including private automobiles, fell from 2.12 percent to 1.17 percent between 1970 and 1988. For the number of trips with round-trip distances greater than 200 miles, bus was the lowest in a modal split including auto, bus, rail and air in 1977 with less than 3 percent.[114] By virtually any statistic, national bus transportation looms small. Even as a proportion of strictly commercially provided service, it is not large although almost double the rail (Amtrak) share in terms of intercity passenger-miles — 6 percent compared with 3.4 percent for rail.

The ICC regulation never seriously changed the structure of the industry from that which it inherited in 1935 when bus transport was included in the *Motor Carrier Act* without any differentiation from regulations pertaining to trucks. Bus regulatory reform was discussed from the late 1970s on in Congress and elsewhere, but it had none of the flavour and fervour of the debates, hearings and media hype that attended airline and truck reform. Since much of bus transport was intra-state, the previous federal regulations had more limited jurisdiction and impact. Thus the reform bill, the *Bus Regulatory Reform Act of 1982*, contained an amendment to the *Motor Carrier Act of 1980*, which freed up much of the trucking industry from economic regulation that specifically pertained to bus transport. This enjoined the states to cooperate on matters of bus transportation to accomplish the purposes of the Act, established procedures to ensure that this would happen and to prevent nullification by state regulatory actions.[115] Both entry and exit requirements were eased, operating restrictions were removed that placed unnecessary burdens upon interstate commerce, and rate-making freedom, initially within a range and later removed entirely unless shown to be predatory or discriminatory, was granted. The ICC retained authority to make whatever distinctions were needed in defining "unnecessary burdens," "predatory," "discriminatory" etc.; to authorize new entry on fitness grounds only; and most importantly, to be able to overrule state authorities that "unduly" restricted discontinuance of purely intra-state operations.

The results of this Act were something less than dramatic. Greyhound retained its dominance and in fact gained market share for the nation as a whole for its total operations. All carriers took advantage of the easier discontinuance provisions so that the number of stops made, particularly at small towns, dropped sharply. Greyhound has suffered from severe labour problems since the early 1980s but began a system of franchising to reduce costs, increase its scope of operations and improve competitiveness against other bus operators and even other modes, mainly Amtrak.[116] Service reductions throughout the industry do not seem to have been a result of reforms in 1982 since they had been going on for at least seven years prior to the Act. At most "the reform of motor bus regulations accelerated a previously established trend."[117] Even so it is believed that "While intercity bus service has continued to decline nationwide, small communities receiving [Greyhound] franchise service have had relatively constant, or increasing, levels of service during the 1982 to 1986 period. . . . the early experience with franchising is . . . encouraging to those concerned about maintaining bus service to low income and elderly residents of small communities."[118]

Continued labour strife at Greyhound has however clouded the picture especially with respect to profitable private bus service to small communities and within rural areas, thus accentuating their isolation. Numerous local initiatives have been undertaken some with state and federal support and some privately financed by local charities as part of assistance to the indigent and elderly. Major intercity bus traffic has been affected as well but should continue to offer alternatives to Amtrak and, to a lesser extent, private cars and airlines. Any major resurgence of competitive strength however will await future conditions and is highly problematical.

Nevertheless, for the vast majority of small towns and most of the rural areas without air or rail passenger service, service by small or medium-size passenger vehicles at least to the nearest junction with an intercity carrier, probably also bus and Greyhound or one of its franchisees, will be the only alternative. In many cases it will have to be publicly financed.

Regulation of intercity bus service has never been its major problem. Nor can regulatory reform provide much of a solution. Economic forces will decide, and what reform has been implemented thus far will give these more latitude. To the extent that the needed travel by bus is neither for business nor vacation, it will take on the aspects of a social service

wherever alternatives are unavailable. Some form of non-user support will then be required, and many ingenious approaches have begun especially at the state and local levels. This implies some form of subsidy beyond the federal system. This also brings up the remaining large problem of direct subsidy to intercity passenger transportation, namely Amtrak.

With the *Bus Regulatory Reform Act* the period of legislative pro-competitive reform at the federal level ended in transportation. The most radical was in the airline industry but major significant changes were related to freight transport which indeed had precipitated the movement. Less complete deregulation occurred in truck and rail freight with the *Motor Carrier Act* and the *Staggers Rail Act*, both enacted in 1980. These two modes, omitting the specialized oil pipelines, accounted for almost 80 percent of intercity ton-miles in 1980. The inland waterways were never significantly subject to economic regulation in the first place nor were contract, exempt and private carriage by truck. Thus, for all intents and purposes, the entire freight industry was permitted to operate under the checks and balances of market forces with few remaining restraints. Certainly they were freer than ever to respond to economic and technological changes pretty much as they saw fit. Yet the ICC was retained as an entity to carry out certain reduced functions according to previous regulation but with new duties under reform. Other less significant industries were also reformed along these lines between 1977 and 1982 such as air cargo, air freight forwarding and household goods.

All commercial passenger service was substantially or completely deregulated by 1982 except for rail. The story of subsequent developments for bus has been noted above. The consequences of airline deregulation are analyzed in Section VI along with developments during the 1980s for intercity rail passenger service. What remains in the present section is a discussion of the development of the Amtrak experiment up to 1980.

THE CREATION OF AMTRAK: A DEVIATION FROM PRO-COMPETITIVE POLICY?

Rail passenger travel plummeted from 77 percent of all for-hire passenger service in 1929 to barely seven percent in 1970, the last year of rail owned and operated service. Worse was that its regular and large losses were jeopardizing profitable rail freight service. In one sense, relief for the railways from something they had been unable to make profitable and regulation

would not allow them to abandon, *increased* their ability to compete in the freight market. Greater freight rate reductions could take place without the need to support passenger service by cross subsidy, and the increased cash flow, without the out-of-pocket loss from the passenger business, would permit greater investment in more efficient freight-carrying capacity. The higher rate of return on assets devoted solely to commodity movement would also attract more capital. All these combined would create the opportunity for rails to compete more effectively with trucks, barges and pipelines over a broader range of goods traffic. In this sense the policy was pro-competitive and consistent with the growing concern with efficiency and market forces.

On the other hand, Amtrak represented a move in the direction of direct subsidy for a service in competition with privately operated, for-profit firms. To be sure, it could be argued that highway users were subsidized indirectly through failure to pay full user-charges for the publicly provided right-of-way. Airlines received a similar indirect subsidy for the airways and airports. These issues were harder to demonstrate certainly in terms of the amount of subsidy each competitor received, especially after the creation of the trust funds into which went some receipts referred to as "user-charges." Nor is it yet clear whether trucks and buses pay either their "fair" share or "efficient" share for their use of the multipurpose highways; similarly with airways. In any event, the subsidy to Amtrak was direct, obvious and politically charged. There was nothing ambiguous about it at all. In this sense, it was *anti-competitive* and non-market determined: hence the question mark in the title of this subsection.

The story of Amtrak and its formation has been well told.[119] It will be briefly summarized here as part of the reform movement or at least one of the major consequences of reform that need to be examined especially in the context of passenger transportation.

As already argued, rail passenger service was taken from the railroads to preserve rail freight service, without much protest! However there were alternatives other than Amtrak. One widely recommended was to let intercity rail passenger service die the natural economic death that seemed to be inevitable if market forces were to prevail, as Hosmer had argued. Another was to reimburse the railroads for the deficits from passenger service and continue as before allowing some abandonment in obviously hopeless

cases where "need," not defined in economic terms, seemed to warrant. The government could simply nationalize the passenger component of rail operations or form a quasi-public corporation to do the same thing, but only after paring the service down to what might conceivably become a profitable or break-even service. What finally emerged was the latter — in part because surprisingly strong public protests influenced Congress not to let even the intercity service die. Part of this strong support for retaining something the public did not use very much was undoubtedly the experience of increasing numbers of people with European passenger service and the widespread publicity of the Japanese new technology and operations of the "bullet" trains. The possibilities of new high-speed technologies were also well publicized by projects examined by the government under the *High Speed Ground Transportation Act of 1965*. Thus, many felt it was premature to let rail passenger service disappear. They felt, on the basis of little evidence that the railroads had deliberately discouraged passenger service to be rid of it and that lurking out there somewhere was a technology that could revolutionize the service and make it economically viable. These views are still prevalent today. It was therefore the duty of the government to take the lead in developing such new techniques. If Japan, France and even England can do it, why cannot the U.S.? Some prestige was thus involved in Amtrak's formation. At the same time more legitimate concerns were being expressed concerning environmental consequences of continued predominant reliance upon automobiles and airlines to provide nearly all the intercity travel.

Thus the *Rail Passenger Service Act of 1970* was passed, over the objections of the Council of Economic Advisers which had played some role in the development of the economic case for transport deregulation. There were other objections but President Nixon signed the bill without much apparent enthusiasm. He was reported to have been undecided whether or not to veto the bill up to the moment of signing.

The Act declared that rail passenger service was a "necessary part of a balanced transportation system" and therefore should be preserved. Furthermore it provided more freedom of choice and would help to alleviate highway and airport congestion. A separate corporation was created, the National Railroad Passenger Corporation, (later known as Amtrak) which explicitly was not an agency or establishment of the U.S. government but rather a private, for-profit corporation supported by the government.[120] The

Act required a basic system to be established in short order. Service beyond the basic system could be provided if deemed "prudent" or if a state, local or regional government body requested it and was willing to bear two thirds of the losses.

Amtrak contracted with the railroads to relieve them of passenger service in return for payments based upon each road's 1969 passenger deficit. With equipment from the railroads as part of their payment, some cash from the government and the railroads too, as well as a basic plan that pleased no one, operations started under new management, so to speak, on May 1, 1971. Nearly half of the passenger trains in existence previously had been dropped, the "basic" system was national in scope — even connecting points where traffic potential was minimal — and the retention of many trains was due to political pressure. Operating with former railroad equipment 21 years old on average, relying on the railroads to actually run the trains under contracts which provided no incentives to give decent service and using the former railroad personnel unable to perform efficiently before, it is scarcely to be wondered that things did not go well. Table 4 summarizes the operating results through 1980.

Table 4
SELECTED AMTRAK OPERATING STATISTICS, 1971–1980

Year	Revenue passengers carried (millions)	Revenue passenger-miles (billions)	Deficit ($ million)
1971[a]	10.6	2.0	55
1972	16.6	3.0	148
1973	17.0	3.8	159
1974	18.3	4.3	273
1975	17.4	3.9	352
1976	18.2	4.1	441
1977	19.0	4.2	552
1978	19.2	4.2	582
1979	21.5	4.9	595
1980	20.8	4.5	599

Source: **Annual reports of Amtrak, 1971–1983; also, Association of American Railroads, *Railroad Facts* (Washington, D.C.: the Association, 1983), p. 61.**

a **Reflects operations for the period from May 1 to December 31, 1971**

To say the very least, the results are unimpressive. Comparison with the late 1960s and 1980 indicates the number of passengers to be barely one fourteenth, the number of passenger-miles, one third of those pertaining some 12 years earlier whereas the deficit is almost 50 percent higher. To be sure, the number of trains have been slashed but not nearly proportionate to the traffic reductions. The higher deficit, even considering inflationary levels, was still worrisome because revenues and costs should have risen no more than equally. Indeed with any improvement in efficiency and rational pricing, the gap between the two might well have fallen. Even with all the caveats, the service continued to be dismal during most of this period.

Yet there were several favourable signs. New equipment began to replace the antiquated materials foisted upon the Corporation in the first years. This equipment was less subject to breakdown, easier and cheaper to maintain and more fuel efficient. The first oil shock in late 1973 and the vigorous campaign to conserve gasoline and use public conveyances doubtless contributed to the ridership spurt in 1974 and again in the second oil crisis involving the Iranian revolution in 1978 which caused oil prices to more than double again. This added to the argument that the fuel efficiency of rail passenger transport was probably worth preserving in an environment of continually rising fuel costs, a proposition that was not disproved until the recessions of 1981-83. Finally, in 1976, the 4R Act gave the Northeast Corridor Boston-Washington main line and several branch lines to Amtrak. With its first ownership of right-of-way, it could provide its own service without contracting with the railroads and could improve the road bed to accommodate higher speed trains. Indeed the 4R Act mandated such improvements and ordered reduction in trip times as well. The Acts pertaining to Amtrak of 1978 through 1980 saw greater concern for cost control, elimination of under-used capacity and worry about the effects of subsidized Amtrak on bus operations. Goals were set to improve on-time performance, raise the average speed of the whole system, increase the ratio of revenues to operating costs at least to 55 percent by the end of fiscal year 1985 and in general to shape up.

In 1980 the newly elected Reagan administration was expectedly hostile to anything smacking of subsidy and openly attacked Amtrak's high visibility in this regard. After almost a decade of operations, Amtrak had gone from a situation where little was expected of it to one where nothing was expected of it. Yet the annual subsidies continued to mount. Hosmer was looking better all the time.

TWO STUDIES REGARDING THE U.S. TRANSPORTATION SYSTEM IN THE LATE 1970s

Concern over Amtrak led to the hope that perhaps the situation could improve if there were better coordination between rail and bus passenger transport. Coordination is a word used so often as a goal of policy that it ceases to be much more than a pious hope, especially in a system that has from the outset insisted upon separation of modal ownership. Nevertheless, the DOT was asked to report on just such a possibility. The report, entitled *Report on the Potential for Integrating Rail Service Provided by the National Railroad Passenger Corporation with Other Modes*, appeared in 1976 and answered with a resounding "No."

The reasons given for such a negative conclusion reside in the barriers to cooperative integrated service, the most important of which is the inherent antagonism between the two modes. Most bus operators, especially those providing parallel service with Amtrak over at least some of their routes, view Amtrak with suspicion and as an unworthy subsidized competitor. There was little desire, at least at the time of the Report, for closer relations between the two modes.

There are of course inherent reasons why intermodal public transportation "involves an added degree of passenger inconvenience when compared to single mode travel."[121] The added inconvenience arises because the intermodal traveller is usually required to "(1) change stations; (2) endure lengthy layovers as a result of poor connecting schedules; (3) purchase separate sets of tickets; (4) transfer baggage; and (5) seek schedule information from multiple sources."[122] The Report examined each of these in the context of Amtrak-bus relations, institutions and attitudes. Without going into any details, suffice it to say that the Report found the sum total of these problems virtually insurmountable and the expected traffic potential so limited even if they were overcome, that the effort and added costs were scarcely worthwhile. This conclusion is relatively easy to accept even though there are clearly specific situations where such coordination is possible and economically feasible. There appear not, however, to be very many of them.

The second report is far more substantive and comprehensive. This study, entitled *National Transportation Policies Through the Year 2000*, was commissioned by Congress in 1976 and directed to conduct "a full and complete investigation and study of the transportation needs and of the resources,

requirements, and policies of the United States to meet such expected needs."[123] To implement the mandate, a National Transportation Study Commission was established, consisting of 18 members (and nine "former members") of which eight were businessmen and the remainder Congressmen or former Congressmen. A large staff was assembled whose findings were subject to approval by the Commission as were the details of the final Report. The chairman noted that the recommendations were approved unanimously by the 18 members.

The timing of the Report was unfortunate since it overlapped the period of most rapid introduction of new legislation, 1976-1979, when it appeared. It was therefore unable to influence the legislation nor did it have the advantage of knowing what kind of legislation would emerge with which it could agree or disagree, except for the airlines. It is lengthy, loaded with data and analysis based upon considerable sponsored research.

Its analysis of transport "needs" required future projections of the state of the economy starting with base year data for 1975 and ending in 2000. Much activity was devoted to estimating the economy and the associated transport levels at that time. From this were deduced the needs which more or less became confined to capital requirements and the policy changes in some sense "necessary" to accommodate the estimated needs. Since the relationships between the state of the future economy, the number of associated ton- and passenger-miles and the capital plus policy changes essential to ensure achievement of the projected transport output are not amenable to quantification without some pretty heroic assumptions, the Report reverted to much descriptive material. When it came to numerical estimation, a lot was left to be desired regarding methodology, data and the (usually) implicit relationship between the end results and the needed transportation resource inputs (capital and energy). The subjectivity reached even higher levels in relation to the linkages between the (over 80!) specific policy changes from the so-called *status quo* situation (itself then undergoing rapid change). Somehow each recommendation was presumably necessary to produce the needed transportation services of all kinds. Such recommendations referred to government organization, economic regulation, non-economic regulation, ownership patterns, financing, pricing, taxation, planning and information, the fuel situation (prior to the second oil crisis in 1979) and so on.

While the scenarios were reasonable enough (mainly the low-growth scenario as far as real GNP, population and labour force were concerned through 1985), the use of the material and its enormous scope made much of the discussion either overly descriptive (though not uninteresting), facile, inconsistent or tedious. The research papers contain better and more useful analysis. The attempt to put them all together in a single, even lengthy volume does not come off.

For what it is worth, the policy recommendations come down squarely in the middle of what was then occurring in the economic policy realm — namely, more reliance upon market forces and free enterprise but with a new super commission to include the ICC, the CAB (soon to disappear) and the Federal Maritime Commission (FMC). Few could disagree with the conclusion that "Over the long term, complete revision of existing Federal economic regulation of transportation should be accomplished. Revisions should be undertaken following careful but expeditious economic analysis of their consequences along with assurances that protect the public from possible adverse effects implicit in such revisions. Basically, such revisions should encourage efficiencies in operation and energy consumption and provide wider latitude in entry, exit, route choice, price, and quality of service by permitting firms to make their own decisions subject to general laws and rules designed to protect the public interest, such as energy conservation legislation, antitrust laws and insurance coverage. Transportation firms should be permitted to merge, however, subject to the same antitrust policy concepts as other sectors of industry, as a minimum, once regulatory reform is implemented. In applying antitrust policies, consideration is necessary for the interconnected, international, and interrelated nature of the transportation industry."[124]

The Report was something of a disappointment but it did reflect the mood of being between two policy regimes. It had the main thrust right but worried too much about how to get from where we were in 1976 to where we, in some sense, were projected to be, equated here with where we *ought* to be, by the year 2000.

6. A Decade of Experience Under Reform

The last year of major legislative change was 1982 when bus transportation was granted more economic freedom from federal regulations. No new reforms along these lines have been made since possibly because, aside

from Amtrak, there was not much left to do in transportation regulation at the federal level. To be sure, the ICC was left with some new duties and reinterpretation of old ones but in intercity passenger transportation it had few remaining duties or authority of much consequence. The CAB was gone by 1985 and had few functions left except for winding down. Thus, aside from water carriage, ferry service and other aspects of state and local intercity travel, economic regulation had been "reformed" along pro-competitive lines.

There are two main questions to pursue in this section as we bring the story up to date. One is, what have been the consequences of regulatory reform for air traffic? We have already noted the situation with respect to buses. And Amtrak was not reformed, it was created, but we will examine what has happened to it as well. The second question is, depending upon the answers to the first, what should the federal government do next with respect to the transportation industries? We have some clues from the DOT's statement of policy in 1990, but the issues remain of what more or less needs to be done in the interests of efficiency including problems of externalities involving safety and the environment, as well as user-charges.

THE AIRLINES AFTER DEREGULATION

Even before the *Airline Deregulation Act* was passed late in 1978, the experiment in decontrol had begun in earnest under Kahn and to a lesser extent his predecessor. Fare discounts were not only allowed without the usual regulatory fuss but actively encouraged. Discount fever swept the industry. Over half the total fares were subject to discount by the summer of 1978. As a result, load factors jumped on average almost 10 percent from 55.5 to 60.7 percent for the year ending September 1978. Carrier profits nearly doubled over the same period. The demand elasticity had been effectively probed under competitive pricing and it had worked. The formal deregulation Act was passed in October of 1978 partly because of such effects although the votes were there before these results were in.

This auspicious beginning was not to last. The next year witnessed the second oil crisis with fuel costs doubling. Price competition intensified and new entrants appeared in many city-pair markets. The general fare level rose but not due to deregulation — or so several early studies concluded. In fact, the fare discounts and out-and-out price competition maintained traffic

quite well. The recessions of the early 1980s, associated with attempts to resolve the supply-side oil shock by stringent monetary policy alone, reduced air traffic demand and led to several bankruptcies of note (Braniff and Continental) and some of the new entrants did not survive. Overall losses occurred in 1980, 1981 and 1982, but as the economy revived in 1983 and began its long period of growth that ended in mid-1990, the domestic airline industry performed quite well. Competition in most markets intensified.

On a national basis there was a return to relatively high levels of concentration as mergers and bankruptcies continued, but market concentration route by route decreased on average in markets of all sizes and dimensions.[125] Recent results (July 1991) show 6 of the 12 largest carriers in bankruptcy. Four of these have filed since December 1990 and one, Eastern, has since ceased operations. Concentration at the aggregative level has potentially increased over the last year by a substantial amount depending upon how the bankruptcies are resolved. Except for Eastern, the current situation has not changed much since the other carriers are still operating and two of them, Pan Am and TWA, have mostly been in international business, which remains highly cartelized. The announced recovery from the recession that began in the summer of 1990 may ease the situation if more vigorous growth occurs than anticipated at present writing (July 1991).

However, most of the evidence up to the present shows that competitive forces are working generally as expected in the airline industry; namely, fares are more volatile in response to changes in supply and demand conditions; there have been more bankruptcies which is the normal process by which excess capacity or managerial ineptitude become resolved, reduced or eliminated in competitive markets; and a closer coincidence between rates and costs in specific situations has been achieved, although the evidence here is mixed.

At the same time there are certain other problems beyond those associated with recent bankruptcies. Price discrimination has apparently increased. Service quality overall has decreased as manifest by the increase in airport congestion which causes takeoff and landing delays. There is an increased sense of crowding aboard most flights as a result of fare discounting and the reduction in excess capacity through higher load factors which have been sustained above the 60 percent level in the late 1980s.

Some of these results are beneficial to most passengers. The enthusiastic response to rate reductions — even discriminatory ones — has helped fill up aircraft to a greater extent than before. For some, the crowding effect is unpleasant and they would be willing to pay more to have more space. To a limited extent this option is available with different classes of service (e.g. business, first class, etc.) but not always. It is doubtful that this inconvenience constitutes enough disutility to suggest that there are no overall net benefits. Kahn gives some evidence to this effect.[126] The increase in load factors is however more efficient and permits lower fares as was intended. The overall improvement in resource allocation is to be commended even if not a totally unmixed blessing.

The increased delays occasioned by the enormous traffic growth since deregulation, itself a function of competitive pricing due to contestability that produced lower fares on average and sharp discounts at specific times in particular markets, is related to the federal government's failure to encourage more airport construction at the state and local level or become more involved itself. Certainly there is no excuse for having supported a policy change that was expected to stimulate the use of excess capacity and to encourage the expansion and use of additional capacity in aircraft, and then not to have accommodated this with commensurate expansion of airway facilities which, from the beginning, have been a federal government responsibility. The excuse of budget deficits is a sham since such outlays are investments. The fact that no new major airport has been constructed since Dallas-Fort Worth in 1974, well over 15 years ago, suggests the source of congestion delay. This may now be on the way to correction but it is very late in the day. Rather than reflecting adversely on the wisdom of deregulation, increased traffic (the cause of congestion) reflects favourably on deregulation. The lack of facilities reflects mostly on the lack of vision of government transport investment policies.

The intensification of price discrimination is more worrisome. In part it reflects the continued concentration in some submarkets and the new dominance of certain major hub airports for the increasingly popular hub-and-spoke system by one or two major carriers. This is partly related to the failure of the federal government to enforce the antitrust laws thereby permitting a degree of concentration that would otherwise not have occurred. This failure was a deliberate part of the Reagan administration's policy of virtually ignoring antitrust enforcement during most of the 1980s as an

aspect of extreme *laissez-faire* and the belief that "government was the problem." As Kahn puts it, "the government clearly has neglected responsibilities of which it was never the intention of deregulation to relieve it."[127] This also applies to airway and airport capacity and enforcement of safety practices, including the failure to replace all the air traffic controllers fired in the early 1980s despite the large traffic and congestion growth.

The issue of discrimination is also, and perhaps mainly, due to the ability, through control of sophisticated computer reservation systems, to take advantage of varying degrees of monopoly power on specific routes to engage in "yield management" — which is a euphemism for trying to maximize net profits from each seat-mile on each flight. With profit limitation and/or *some* greater degree of competitive pressure, differential mark-ups over marginal cost are both essential and efficient, as Ramsey pricing theory indicates. It would be folly to deny it to the airlines when the *Staggers Rail Act*, which "reformed" the rail freight industry, virtually mandates such pricing in the interests of revenue adequacy. Yet the extent of such deviations from costs and the failure of the fare structures to pay attention to distance bothers many people. Vastly different fares for the same flight and service reinforce concerns about "fairness" or apparent equity. The original *Act to Regulate Commerce* arose out of just this kind of emotional response to long- and short-haul railroad pricing. At some point there is a trade-off between equity and efficiency, especially where the degree of fare differentials becomes so wide that it induces a customer backlash that could lead to some re-regulation however much economists may justify Ramsey pricing. It simply does not seem fair. The encouragement of more open access to computer reservations systems, more vigorous antitrust activity and expanded capacity of the infrastructure to attract competitive challenges to hub-dominance, might alleviate the extent of discontent and prevent more drastic re-regulation.

All things considered, airline deregulation has been at least a qualified success. The industry is certainly more competitive and efficient than it was. The benefits of improved efficiency have been distributed widely if unequally. There is little evidence of monopoly profits. Most other industries with these features would be let alone or tolerated for the degree of market concentration, industry practices and results that have thus far typified the airlines. Furthermore the prospects of even more competition from foreign airlines are promising. An "open skies" policy in Europe, scheduled for 1993,

could be matched by a similar policy in North America. The U.S. Secretary of Transportation is reported to have said that "America and Europe will one day negotiate a deal to allow their carriers completely free access to each other's markets."[128] It is therefore much too early to talk about reversing the past 13 years of substantial economic freedom in the U.S. airline market despite some real and potential problems none of which require major deviations from the promising trends already established. The federal government however must change its stance toward airport and airway capacity and efficient pricing thereof and more rigorously enforce antitrust laws. It should also support open-skies policies. Eternal vigilance is the price of maintaining competition. It is also worth it.

AMTRAK IN THE 1980s

One might wish that the intercity rail passenger transportation problem had been as well resolved as that of the airlines. Unfortunately this is not true although there are signs of improvement.

Since 1980 the number of passengers has risen less than 10 percent and passenger-miles about one third. The federal subsidy is estimated for 1992 to be about what it was 12 years ago but one third less than its peak of almost $900 million in 1981. In short, it has shown traffic growth far below airlines, but above intercity buses and little reduction in the amounts required from the government. It still plays a minuscule role as a *national* carrier but is much more significant in the Northeast corridor where it carries about one third of the combined rail and air passenger traffic. Even here the proportion falls sharply to less than two percent if bus and automobile intercity traffic is included. After 20 years one cannot say that Amtrak has not lived up to the limited ambitions as envisaged by its supporters.[129] But it has done little more than hold its own if we discount, as is only fair, the initial five years as experimenting with inadequate equipment, despondent personnel and more than the usual start-up problems. It is clearly not a national carrier as over half of its business is done along the Northeast corridor.

As a short-term measure to relieve the railroads of their losing passenger service and at least salvage the freight business, it has been successful. As an experiment to see whether *traditional* rail intercity passenger service has a future on a national scale it has failed. It is clearly of some consequence in the Northeast and perhaps has a chance in several other corridors but that

seems unlikely. The existing technology has few prospects as either a major player along the limited number of high-density corridors or, more certainly, as a national entity serving hundreds of communities and cities, as is being attempted now. Indeed it is probably obsolete even as an important aspect of any specific high-density corridors. For these, there are the options of the higher technology that has long been in use in Japan and France and new technologies being developed such as magnetic levitation (maglev) and others.

High-speed trains "are an entirely new mode of transportation".[130] They run on exclusive rights-of-way, using different power systems and can achieve speeds of up to 300 miles per hour (mph). Amtrak's top speed is only 125 mph between New York and Washington, D.C., and this only after a $2.3 billion investment in track upgradings, removal of all grade crossings, introduction of electric locomotives and improved signal and communication systems.[131] Maglev techniques even by-pass the historic "flanged steel wheels on steel rails" which virtually defined the railroad concept. Not only is this a new technology but it is one that is changing rapidly. So far as one can see, Amtrak is unlikely to be involved with it in any meaningful way. In fact separate states have been examining these alternatives for up to ten years largely independently of Amtrak. They include Texas, California, Pennsylvania, as well as consortia of states such as the Midwest High Speed Rail Compact, the Coalition of Northeastern Governors. The apparent success of the TGV in France and the Shinkansen in Japan and the prospects of the recently opened German Inter-City Express on May 29, 1991 with maximum speeds above 175 mph and potentials above 200 mph have stimulated renewed interest in North America, although it may have much more limited application than in Japan and Europe.

There are several reasons for this. In the first place, distances between major urban centres, or areas where high-density corridors are possible, are much greater in North America than in Europe and Japan. If the competitive range for high-speed ground transport is taken as between 150 and 500 miles and requires a ridership of about six million passengers per year to break even, given the most likely combination of fare and cost level, there is only one corridor in the U.S. now generating that number of passengers by air (Los Angeles-San Francisco) and only four expected by the year 2010. Any high-speed ground transportation system would have to capture all of the existing air traffic and/or a substantial portion of air plus automobile and bus traffic

to be economically viable. Given the likelihood that speed, capacity, comfort and efficiency improvements would be occurring in the competitive modes as well through the year 2010, the chances of any large-scale, unsubsidized, rail intercity high-speed operations seem slender indeed.

Secondly, the European and Japanese systems originated in heavily travelled rail corridors that were approaching capacity and could therefore build incrementally upon a system that had already achieved relatively high speeds.

Thirdly, the systems in Europe and Japan were far more fully integrated into a national system of conventional rail and terminal networks for passengers which no longer exists in the U.S. to anywhere near the same extent.

Finally, the relative dependence upon rail for intercity travel was far greater in Europe and Japan than in the U.S. when the former began investing heavily in high-speed rail facilities. In fact, in the U.S. rail intercity passenger traffic was dropping rapidly and with it any major concern for its maintenance given the comparative advantage of automobiles and airplanes in the U.S. with relatively low fuel prices and ubiquitous highways and airways priced at less than full costs to users.

For all these reasons, the technologies for high-speed rail passenger traffic were developed and introduced far earlier elsewhere, Japan in 1964 and France in 1981 for the actual beginning of revenue service. Any transference of them to the U.S. will have to face up to substantially different circumstances here and to the historic policy of modal independence. There is simply no national constituency for implementing an almost wholly new transportation system that would compete effectively without a heavy infusion or commitment of federal resources at least to supplement state, local and private finance, and far more support than implicit in *Moving America* (see next subsection).

Amtrak seems remote from such considerations and federal involvement is not great yet since, except in the Northeast, the systems thus far envisaged are almost entirely intra-state. They are also enormously expensive. However, the TGV reports, up through 1985, internal rates of return for the Southeast system of "15% for the French Railroads and 30% for the community as a whole."[132] A recent study by U.S. DOT relating specifically to maglev technology concludes that "it will be economically feasible to

construct a limited number of commercial maglev systems in the United States, starting in this decade."[133] This is only for a limited number of route-miles and, except for the costs involved (about $50 billion), remind one of the early turnpike roads. Most reports are less optimistic about economic feasibility.

This is all highly speculative. As it pertains to Amtrak, however, it suggests that either its operations should be confined to the Northeast corridor and the track there upgraded to achieve significantly higher speeds using newer already proven technology (maglev is of course premature) or the experiment be wound down. If the only reason for keeping it going is that the value of the assets at liquidation would be far less than the obligations of the Corporation and thus the government would become a payer of last resort at an expense greater than the current subsidy, as implied by Tobey,[134] then the time has surely come to end it as gracefully, quickly and expeditiously as possible before even more capital commitments are made.

There may however be efficiency reasons for continuing at least portions of the Amtrak experiment. A recent route-specific analysis of Amtrak's operations, based upon a disaggregate intercity passenger demand model for 1977 calculated a measure of net social benefits (NSB). It concluded that "government subsidy may be economically justified on dense short-haul routes like those found in the northeast corridor, but subsidizing long-haul and low-density routes cannot be justified using economic efficiency arguments."[135] In fact the net social benefits are positive for the whole operation but only because of the huge net benefits from the Northeast corridor. One can, of course, quarrel with the demand model employed, the data available and the method used to calculate NSB. However the general findings seem reasonable enough and the whole approach, even with the acknowledged qualifications, verify earlier conclusions that the "benefit offered by rail travel is greatest on short routes between large cities where the primary beneficiaries are business travellers."[136]

Though the system may not be financially viable, the efficiency criterion requires only positive NSB, although some of the social benefits could be captured on selected routes through some variant of Ramsey pricing to reduce the specific financial subsidy. This combined with continued improvements in cost effectiveness and productivity could turn the Northeast corridor into a financially break-even operation. If Amtrak is viewed as a basic

national rail passenger system, then financial viability and net social benefits are reduced. Few network economies or benefits exist in the sense that most of the routes outside of the Northeast corridor do not feed much traffic into it nor provide contributions to joint or common costs.

The experiment attempting to create a *national* system has not succeeded and shows little prospect of much improvement. As with the railroads and passenger service, a decent effort was made but to no avail. It should be stressed that ending Amtrak does not preclude development of high-speed rail in the U.S. along specific corridors. Indeed, that appears likely within the next decade. It will not however bear much relationship to Amtrak as originally conceived and thus far executed except for the Northeast corridor.

THE LATEST NATIONAL POLICY REPORT

In February 1990, the Secretary of Transportation released the most recent statement of transportation policy under the title *Moving America, New Directions, New Opportunities.*[137] This is based on several assumptions. First that the basic U.S. transportation infrastructure is complete in the sense that massive extensions of it are no longer necessary nor, with few exceptions, would they prove to be economically feasible. The system is mature. It needs lots of work however because of inadequate maintenance and increasing capacity constraints. It is now more important not only to maintain the system but to use it more efficiently. Indeed economic and efficiency criteria are everywhere in evidence throughout this Report. Thus, the way to use the infrastructure more efficiently is through sensible pricing. This covers a host of possibilities including peak/off-peak pricing, cost-based pricing including full user-charges for use of publicly provided facilities including externalities, elimination of subsidy, modal coordination, modal equity of treatment among modes and so on. New technologies are emphasized including high-speed rail, intelligent vehicle/highway systems, research to create and disseminate new technologies and demonstration projects for new techniques. To improve efficiency, intermodal equity and allocation within transportation, the remnants of economic regulation of rail and truck freight transportation are to be removed. As far as this Report is concerned, the regulatory reform movement has not only been successful but is continuing. Even freer markets and more of them are sought in transportation.

As would be expected, safety and defence needs are emphasized, but couched in terms that are not inconsistent with efficiency criteria, namely that, given the goals, they are to be achieved by least-cost techniques. Even the size of the estimated defence needs will be scrutinized to minimize negative economic impacts.

Another main assumption underlying the Report is that the federal role should be limited in various ways. Federal funding will be available only to projects of truly "national significance."[138] Furthermore, "the increased responsibilities and capabilities of the State and local and private sector partners" must be recognized.[139] This applies not only to maintenance but to other projects as well. Greater use must be made of user-charges and innovative financing techniques by state and local governments and the private sector. "There is widespread recognition that the United States will need to rely more on the private sector to finance facilities and services in virtually every area of transportation . . . [G]reater use of innovative financing approaches, including private financing initiatives and joint ventures by private companies and State and local governments"[140] should be encouraged. "State and local governments have already assumed greater responsibility in transportation. This can and should continue."[141]

Along with reduced largesse, the federal government will relax constraints upon how the reduced funding may be used by the state and local authorities. "It is Federal transportation policy to . . . move toward greater flexibility in use of transportation funds at all levels of government for facilities that enhance access and improve connections."[142]

The limitation on the federal role in finance will however be partially offset by activities that enable state and local governments as well as the private sector to plan and allocate resources, wherever or however derived, more effectively and especially where they fill gaps in the national system.[143] Federal outlays will also be increased to assist "research and technology projects" in a wide variety of ways such as providing seed money, maintaining a knowledge base, promoting "adoption of new technologies"[144] and so on.

In short, beyond the reduction of federal activities already implicit in the deregulation that has occurred since 1976, further reductions will take place in the funding of new transportation assets even though future needs will

be substantial. The federal role will be more one of monitoring resource use, assisting in various ways to enable others to tap financial resources and use them effectively, promoting innovations, education and competition in transportation and, in general, playing a mostly hands-off, chairman-of-the-board type of function. This contrasts with the previous role since the Great Depression when vast amounts were paid for highways, airways and other aspects of the infrastructure to say nothing of the outlays for the several regulatory commissions. In a sense, the federal government is putting the states, local governments and the private sector on notice that the big job of infrastructure building is done. It is up to them to maintain and manage it properly.

The federal government will assist with gap closing, maybe some infrastructure extension but mostly with supervision and some managerial help. This has been referred to as "a vision of federal policy that is narrowing, retrenching, retiring."[145] It is also probably true that this withdrawal is a recognition of the enormous costs in money, accidents, environmental and aesthetic degradation occasioned by much of the economic regulation and infrastructure building of the past century and a half or longer. One suspects that it is mainly motivated by the federal budget situation. Even so, it is a reasonable retreat. Market forces are doubtless better users of the facilities than regulation and there is little doubt that much excess capacity exists throughout the system's right-of-way, despite serious congestion in some areas. Proper pricing and some efficiently conceived new capacity will probably suffice for the next decade or so especially if bolstered by new technologies that are not outrageously costly. We have come full circle from the days when the federal government was reluctant to spend anything on transport right-of-way except for projects of "truly national importance" and left most of the regulation and investments in transportation to the states and local communities, through the activist period when the opposite applied, to 1990 and back to *Moving America.*

THE UNFINISHED BUSINESS OF REGULATORY REFORM

The unfinished business of economic reform of intercity passenger transportation involves a package of at least three major ingredients: first, a more conscientious effort to price publicly provided infrastructure more effectively and consistently across modes so that competition can play its role in the passenger business. Second, from the very beginning, there should

have been a moratorium on mergers, except for the most compelling cases of, for example, inevitable bankruptcy or termination of an active competitor in order to maintain as many traveller options between city-pairs as possible and, hence, give competition and market forces a real chance to see how effectively they can work. Finally the regulatory authority needed to be stripped of all powers to prevent freedom of exit and entry and to price in any way the firms saw fit so long as no antitrust laws were violated. In essence, treat the ICC just as the CAB was treated.

This was not done in intercity surface passenger transportation. In a real sense the experiment in regulatory reform was not allowed to work out with respect to passenger traffic as it was with respect to freight. Perhaps this relates to the fundamental differences between the two markets noted earlier: moving people requires a higher degree of manifest public concern for safety, comfort and convenience than does moving things. Market forces are not to be trusted to the same extent where people are involved. The failure to allow market forces to determine the quality, quantity and price of intercity rail transport reflects this approach which surprisingly did not emerge with respect to air transport. Thus, other factors must be at work.

BEYOND REGULATORY REFORM

Among these other factors are the new priorities which began to emerge in transportation policy even before the first deregulation bills were passed. Protection of the environment, transportation safety, energy use and urban sprawl were issues that preceded regulatory reform and remain even more urgent today, especially as the U.S. Congress debates what has been called the "first major overhaul of the federal transportation system in 35 years."[146] Part of the rationale for Amtrak was that rail intercity passenger travel was more fuel efficient, safer and less polluting than automobiles or airplanes. Thus there would be substantial external benefits to a more extensive use of railways which would more than justify the meagre subsidy. It was also believed that autos and planes were heavily subsidized in many different ways most evident through inadequate user-charges and uneconomically low fuel prices which encouraged excessive use of scarce fossil fuels, created congestion, pollution and suburban sprawl and caused more deaths and injuries. Thus the highway and airway ages were seen by some as artificial creations of a public policy that has warped the outcome

against alternatives such as railroads and buses, both of which could move the same number of passenger-miles at incredibly lower real "costs" in all of these dimensions.

There is, in all this, no recognition of the value to the user of the enormous quality differences among the modes which is especially important in passenger transportation compared with freight. A ton-mile of cargo moved by rail or truck may not differ much from some shippers' point of view but a passenger-mile by bus, Amtrak or TWA has a huge difference in "value" as average passenger fare differentials suggest. Demand considerations cannot validly be neglected in efficiency determination as the centrally planned economies learned the hard way. Again, this type of thinking about efficiency only in relative cost terms is partly a product of the failure to distinguish between freight and passenger transportation.

The environmental concerns however highlight the need for a more careful examination of user-charges, including amounts necessary to compensate for congestion and pollution. This is no easy task. Yet the importance of efforts to do the best possible even with the existing inadequate information cannot be over-stressed. In addition, it would be worth considerable investment of resources and efforts to obtain information to enable more reasonable estimates of the full costs, including the externalities, of private and commercial use of the highways and airways, by vehicle and plane type, and assess these accordingly. It is doubtful that this would significantly change the modal composition of travel demand but it would provide a substantial incentive to automobile, truck and aircraft producers to enhance fuel efficiency, develop alternative fuels and reduce pollutants. This would also improve the performance of markets in achieving a true least-cost outcome in the economic sense. In fact this was what the regulatory reform movement was all about in the first place. It required full user-charges and maintenance of traveller modal and intermodal options for the effective functioning of commercial transportation markets freed from economic regulation. This was seldom made explicit. As a consequence, maximum efficiency has not yet been realized in the case of intercity passengers.

The most recent concern is about growing congestion of certain major areas of the highway and airway systems. However, these apply mainly to selected airports and to highways in and around major cities. There is plenty of excess capacity elsewhere in the intercity rights-of-way beyond

the urban confines. Yet there are plenty of reasons for concern for intercity transportation as well. Most intercity travel originates or terminates at an urban centre or airport hub where congestion is likely to become increasingly severe. Up to now, the approach has been to build more physical capacity. But there is now more opposition to this for safety reasons, because of excessive costs in already built-up areas, pollution concerns including noise, visual pollution as well as noxious emissions and others. No new major airport has been completed since 1974 in part because of strong community opposition — the NIMBY (not-in-my-backyard) effect. Paving more urban freeways or by-passes runs into similar opposition and when they do get built usually only arrest congestion for a short time. The effort is now focussed on how to get more transportation out of the roads we have already built. "We have poured enough concrete," as Senator Moynihan vividly proclaimed in the context of the pending highway bill.[147] Indeed, using the existing infrastructure more efficiently is one of the goals of regulatory reform. It also requires full user-charges, time-of-day pricing and other schemes already noted. These also apply to the *urban* air and highway networks along with many other necessary measures to ameliorate the so-called urban problems.

Thus the emphasis upon improved maintenance and more efficient use of the existing infrastructure makes special sense at the current juncture. It will however take much more than simply eliminating the kind of economic regulation that involved the ICC and CAB and placing blind reliance upon even competitive market forces, important as these may be. The role of the federal government in intercity passenger transportation is far from over. Indeed, it may increase sharply if high-speed ground transportation is to proceed much further. Ironically the role will shift from deregulation of air and bus service to promotion of some "rail" (higher speed, of course) intercity travel, the shrinking and confining of Amtrak to the Northeast corridor and the more active promotion of competition within the air and bus industries.

EFFICIENT INFRASTRUCTURE PRICING: HIGHWAY USER-CHARGES

More than deregulation and greater reliance upon competitive market forces are needed to improve transport efficiency and performance. It is the duty of government to ensure that most if not all transport markets are and remain competitive, contestable and, in the economic sense, "free." There is little point in substituting a private for a public monopoly if one cares

about "the public interest." Constant efforts are required from these agencies of government concerned with antitrust or anti-combines policies to ensure free, open and contestable markets in the transport sector following regulatory reform. But even free markets are not enough. Since much of transport infrastructure is publicly provided, no automatic, free market mechanism will ensure that it will be efficiently priced to its users, the providers of transport services whether public or private. Thus efficient infrastructure pricing is equivalent in importance to deregulation and maintenance of competition if we seek efficiency of production and consumption in transportation.

The favourable economic outcomes resulting from a largely pro-competitive market, require that suppliers of passenger services pay the full costs borne by society in producing such outputs. The marginal social costs of production is the "price" that needs to be charged for all goods and services, including those of publicly provided infrastructure.

In all areas of production, there are problems in measuring precisely what constitutes marginal social or even marginal private costs. Where externalities are involved, the difficulties of measurement are substantially increased. In transportation the situation is further complicated because much of the infrastructure is publicly provided, maintained or improved from its natural state as in the case of waterways and ports. The "services" of such infrastructure are not only hard to define, but difficult to cost and hence to price properly, whether used for commercial or own-account purposes. The fact that some modes (e.g. rail and pipelines) own their own right-of-way and must somehow price it correctly in the product sold, does not solve the problem; it merely changes the locus of responsibility for doing it.

Within the entire transportation industry, including passenger and freight commercial and non-commercial, a set of at least reasonably plausible cost-occasioned user-charges is indispensable. Yet few attempts have been made to develop such estimates or even to build, maintain and finance highways using efficiency criteria as at least part of the input. It is thus difficult to establish whether particular highway user-groups pay either their fair or an efficient share of the total costs of the highway system, although various partial studies in both Canada and the U.S. tentatively have concluded that heavy trucks seem to pay less in user-charges than the costs they occasion, while passenger cars and buses pay more. But without improved estimates, data and methods even this tepid statement is largely guesswork.

More attention has not been paid to this important aspect of efficiency for many reasons. These include socio-political rationales that stress the public nature of highways and the need to have them "freely" accessible to all, that many of the benefits accrue in the form of greater national unity, national defence, generalized stimuli to regional and national growth and other such quasi-public goods. Hence no specific user-charges should be made since the benefits are widely diffused. However, highway investment, use and maintenance utilize resources that could have been employed to produce other goods and services of equal or greater value. To prevent over-investment and excessive use of highways, or anything else for that matter, requires the imposition of efficiency criteria. When competing wants are considered, so long as we live in a world of relative scarcity, resources and their use must be priced appropriately if they are to be provided in the relative quantities demanded at the least social cost. Thus highways produced in amounts decreed by non-economic criteria and financed from general taxation are likely to absorb excessive amounts of real resources. Some linkage between infrastructure production, financing and user as well as non-user costs and benefits is clearly required.

Another reason why these linkages have not been instituted in Canada and why there is no formal relationship between road taxes and expenditures is because data have only recently become available in Canada.[148] More important is that there is no general agreement on which of the various methodologies should be used to allocate highway costs even if all the appropriate data were available.[149] Considerations of efficiency easily become intermingled with equity, subjective judgement, costs occasioned versus benefits received, appropriate units of measurement and so on.

In short, there remain many controversial issues in this area before, as Nix puts it, any "cost-allocation study could be undertaken for policy guidelines."[150] This is not a counsel of despair, for various measures can be implemented that move in the direction of greater efficiency. The potential gains from so doing are substantial. The current financial administration of highway systems in Canada and the U.S. so disguises the real resource costs attributable to different users and non-users that efficient production and use of highways and substitute modes are seriously distorted. Since highways represent a significant portion of each nation's capital stock, and annual investments and users thereof represent a substantial share of national income and expenditures, it follows that there is probably considerable economic waste from inadequate user-charges.

ESTABLISHING LINKAGES

Linkages between highway expenditure and road user-taxes or charges must be made. A more efficient set of user-charges for highway systems and an accompanying scheme of fuel and other taxes and fees must be designed to recover the marginal social costs of highway use from each user or user classification.

To begin with it is necessary to define a road user-charge with some care. Sales taxes on vehicles, trailers, parts and other transport equipment and income taxes on commercial providers of transportation cannot be construed as highway user-charges because they are unrelated to use of the highway. Even fuel taxes cannot logically be viewed as charges for the use of the highways *unless* they are established differentially higher than any existing general sales taxes and the additional proceeds specifically linked to highway costs occasioned by the users.

For existing highways, the costs to be recovered from users are the annual maintenance, repairs, superintendence, policing and administration cost that vary with highway use. Past capital costs need not be recovered — they are sunk costs. New highway investments should be made on the basis of well-known benefit-cost criteria.

(a) *Highway user-charges:* Even without complete information, user-charges can be established that will allow users to calculate the costs of additional vehicle trips that will specifically include the additional wear and tear, etc. on the highway itself. If congestion or pollution occur on certain highway segments, a differentially higher congestion or pollution levy can be added to the fuel tax for those using the affected segment. This is difficult to administer in practice but if the area affected is sufficiently broad it can be implemented well enough to have a positive impact upon highway congestion and that portion of overall pollution caused by vehicular traffic.

In other words, a properly designed fuel tax supported by licence and registration fees for vehicles, trailers and other highway user types, can come tolerably close to what is meant by marginal social cost. Indeed, this tax itself is a kind of synthesized price for highway services. It is not of course easy to determine the economically correct level of taxation

nor the correct value of marginal cost for *each segment* of the overall highway system. There are many conceptual, empirical and analytical problems involved as indicated earlier. But acceptance of the principle of linking specific taxes to variable highway costs will itself provide incentives to improve and sustain such a linkage.

(b) *Toll roads:* Various highway segments may be constructed, improved or simply designated as public or private toll roads administered by some authority. The function of the authority would be to recover the full costs of the system. Under either private or public ownership, the authority could be mandated to establish a set of prices which, with projected traffic of various kinds, would permit the enterprise to cover costs, including a "normal" rate of return, with receipts. This could take the form of Ramsey or constrained market pricing based on the inverse of the elasticity of demand for the several services or products that minimizes the loss of consumer surplus while providing normal profits and efficient production.[151] This is especially important in situations where variable or marginal costs are declining, where large amounts of costs do not vary much with traffic volume or output and/or where economies of scale exist. In other words, if properly done, this represents an "optimal departure from marginal cost pricing" that avoids both subsidy and internal subsidization and permits strictly private operation and/or ownership. In this way, various highway segments could be more efficiently priced, and expanded or contracted, as cost and demand conditions warranted. At least, obviously "unprofitable" links in the system could be allowed to deteriorate rather than require ever more public resources to maintain even when traffic did not warrant.

Such authorities could of course exist only for selected corridors. The learning experience of attempting to link highway investment, finance and pricing together on a market-oriented basis, might well prove worthwhile. More and more activities hitherto viewed as having to be publicly owned and operated have now become privatized, in many cases with dramatic improvements in both efficiency and service quality. Such may be the case here.

(c) *Highway trust funds:* The linkage between costs and outlays is formalized under a highway trust fund analogous to that in the United States. Federal taxes on fuel, parts and so on are allocated directly to the Highway Trust

Fund (established in 1956) and used for construction of federal aid highways although there is no pretense that all of the taxes are strictly user-charges as defined above.

Before 1956, highway expenditures in the U.S. had been part of general revenues into which receipts from highway user taxes had been placed, as is the case in Canada now. The trust fund arrangement allows federal aid to highways to be more carefully planned over a longer time. Since future proceeds from the designated highway taxes can be forecast with reasonable accuracy, highway programs are more definite and no longer have to engage in an annual competition with all other federal programs. Outlays for highway maintenance can be regularized and not interrupted from time to time because of budgetary considerations.

The linkage involved is more consistent with efficiency criteria as noted above and also with the principle that highway users and beneficiaries should pay for the costs they occasion. In addition, if higher user-charges are needed, they are likely to be more acceptable if the users know they will be spent on highways rather than on something else.

On the other hand, extension of the trust fund concept would seriously limit the discretion that the federal government has over its expenditure patterns and could impede effective fiscal policy or important reallocations of government outlays. The current fuss about holding excess revenues in the trust fund for airports and airways in the U.S. for reasons related to the overall budget deficit rather than responding to the needs of overcrowded skies is an example of one kind of problem. Although widely heralded when initiated and with a reasonably good performance, the Highway Trust Fund must also be viewed in the larger framework of overall fiscal policy where its virtues are less obvious.

7. Lessons from the Past: Relevance to Canada

It might appear that there are only negative messages here for any other country, explaining only how to avoid some of the more egregious mistakes. Even if there were some positive aspects, it is unclear whether another country would profit much from them. Wilson's "second law" is that "no country learns from the mistakes of another." That is however

rather defeatist and contrary to the purpose of this entire undertaking. Besides, even if the lessons are negative that does not make their message useless. Nor, given the proximity of Canada and the U.S. in ways well beyond geographical including the new forms brought about by the Free Trade Agreement, is it beyond the realm of possibility that some of the positive aspects of U.S. passenger transportation policies would be of some interest and even guidance to Canada.

Let us begin, however, with a certain paradox. Canada altered its transportation policy formally long before the U.S. and in a direction that the U.S. eventually copied. From erstwhile teacher to reluctant student and follower needs some explanation.[152]

WHY CANADA WAS FIRST

The MacPherson Report of 1961 led to new legislation by 1967. Although some minor skirmishes occurred earlier in the U.S., as noted in Sections 4 and 5, it was not until the early 1960s that the first official reports began to emerge suggesting certain reforms but compromising on the need for regulation. There was President Kennedy's message but it went nowhere. The big lag in the U.S. was legislative — about 13 years, depending upon which modal reform measure used, compared with only six years in Canada.

There are several reasons for Canada's earlier success. The MacPherson Report was the result of investigations by a Royal Commission which gave it far more stature in Canada than any of the reports reviewed in this study have in the U.S. Congressional studies, presidential study groups, advisory commissions or task forces inevitably smack of partisanship and tend either to be very controversial or lacklustre — a kind of mixed bag to accommodate all the conflicting interests. As such they are far from being the kind of persuasive document that the MacPherson Report was, which focused strictly on the national interest. It not only emerged from a Royal Commission, which put it one step ahead of any of the U.S. transport studies in terms of prestige, but it was extremely well done and consistently argued. In short, it was persuasive in a sense that the U.S. reports were not.

The U.S. legislative process, even when a majority of legislators may be fully convinced of the desirability for some action, is inevitably more protracted for several reasons. During much of the period under review, the President

was from a party different from either the Senate or the House majorities or sometimes both. This leads to far more bickering, politicking and belated compromising than would otherwise be the case.

Transportation in the 1960s was more significant to the Canadian economy and polity than in the U.S. If it could be demonstrated that the system was operating under great handicaps by virtue of "obsolete" regulation and that greater reliance upon market forces would lead to large efficiency gains, the prospects of early legislative success would be enhanced. On the other hand, the more important the issues the longer the debates would be and conversely for relatively unimportant issues. This did not occur in the U.S., however, because transportation, while important, kept getting pushed down the legislative priority list. The greater involvement of the U.S. in world affairs, for example, lead to a siphoning-off of Congressional and presidential concern. A trade-off between domestic and foreign concerns tended to predominate from the mid-1960s on including the Indochina War, the cold war, detente, and the more recent dramatic events in Eastern Europe and the ex-Soviet Union. Thus, not only was the case for deregulation not convincingly or forcefully presented as it was in Canada, it did not appear to require such urgent and immediate attention as other matters.

In addition, the U.S. regulation of transport, especially the trucking industry, was far more cumbersome, detailed and intrusive than that in Canada. It made the law and its interpretation more complex and, most importantly, it created a set of vested interests not only at odds amongst themselves but which resisted any change that affected them adversely or benefitted their rivals even relatively. The interest groups had powerful lobbies such as the Association of American Railways, the American Trucking Association, American Waterways Association, various shipper groups and labour associations representing each mode or broader labour unions such as the Teamsters, Longshoremen, etc. Any radical change in policy was bound to be extremely contentious thereby inviting Congressional rejection of controversial measures or emasculation of important aspects of particular bills. Even when legislation proposing somewhat greater reliance on market forces passed, it was frequently interpreted, by the ICC in particular, in such a way as to signal no change at all.

Finally, the process was prolonged by what some view as a greater propensity of U.S. business, labour organizations and private citizens to litigate and

protest actions viewed as contrary to their interests than in most other countries, Canada included. Since the issues were often complex and hypothetical[153] there was much scope for litigation. Indeed, frequently, the Department of Justice would oppose ICC rulings as did, later, the Department of Transportation. The government itself did not speak with a single voice on transportation issues.

These appear to be the most plausible reasons for the long U.S. delay. There may have concurrently been aspects of the Canadian polity between 1961 and 1967 that made reform legislation more expeditious than would otherwise have been expected. I leave this part of the story to others more informed.

CANADIAN-U.S. POLICY DIFFERENCES

There are, however, some aspects of both U.S. and Canadian transportation policies in general and passenger transport in particular that might usefully be raised at this point. The MacPherson Report relied upon intermodal competition in advocating regulatory reform and reliance upon market forces and said very little about intra-modal competition except where trucking was involved. Indeed, it relied upon the high degree of competition likely to prevail within trucking. It also relied on the possibility that own-account trucking and passenger car travel on increasingly ubiquitous, publicly provided highways would protect shippers and passengers from rail and air duopolies or tight oligopolies under deregulation.

The U.S., on the other hand, having sharply restricted competition within modes from 1887 through the 1930s, left intermodel competition to take care of itself. There were far more firms of each mode serving most city-pairs than existed in Canada. With freedom of entry there would have been even more firms competing — certainly enough to create workable competition and contestability. Yet progress in deregulating intra-modally was much slower than in Canada.

Nevertheless a paradox remains. While Canada relied largely, through necessity occasioned by relatively smaller markets and using the same transport technologies as the U.S., upon intermodal competition, there was never a policy of modal separation. On the other hand, the U.S., while restricting intra-modal competition up to the late 1970s, had a relatively strict policy against formal intermodal integration. In other words, the U.S.

was bent upon preserving the perceived specialized "inherent advantages" of each mode and competitive equality among them. From the vantage point of the 1930s and despite a much stronger antitrust tradition in the U.S., this seemed to require careful economic regulation and/or promotion of each mode including trucking and air transportation and greater reliance upon regulatory commissions than competition in transportation. Competitive forces intra-modally were to be constrained while those intermodally were to be encouraged — hence the twin policies of detailed intra-modal regulation and intermodal separation.

Canada's prospects for intra-modal competition in rail and air were naturally more limited and the regulatory philosophy inherited from the U.K. less militantly antitrust. Canada viewed industry structure as a poor indicator of competitiveness in that a high degree of concentration probably reflected scale or at least financial economies and was thus to be tolerated but carefully watched and/or regulated to prevent abuses. With this viewpoint, Canada not only adopted a transport policy based on intermodal competition but permitted the railways to enter any other mode they chose and to any extent. The results in practice for Canada were not much different from those in the U.S. because the railways did little to integrate, say, truck transport into their operations but treated truck subsidiaries as separate and largely independent and autonomous profit centres rather than as instruments to stifle non-owned truck competition. Various public investigations of rail ownership of trucking companies since the 1967 Act have found that:

> Nothing in this investigation, either the hearing phase of it or the information elicited by the extensive investigative work that we have done, reveals undue restriction of competition or prejudice otherwise to the public interest. . . . There has been this build-up of a trucking arm in CN and, as we have reported in this decision, Canadian Pacific is even larger in the trucking field than Canadian National. But these developments have proceeded alongside another development — the tremendous growth of that part of the Canadian trucking industry that is neither owned nor controlled by the railways.
>
> The growth of the trucking industry and the fact that it is now No. 1 among all the Canadian domiciled carriers of freight in terms of domestic operating revenues generated — this and the moderate size of the foothold which the railways have achieved in "for-hire"

> trucking — fatally flaws the contention that because the acquirer of Chalut is Canadian National Railways there is undue restriction of competition and prejudice otherwise to the public interest. That contention, certainly at this juncture in the development of Canadian transportation, is not well founded. Indeed, the investigation which we have conducted has exposed the other side of the coin: that the Canadian trucking industry at this time, and notwithstanding difficult problems that undoubtedly confront it, is continuing to forge ahead. The trucking industry is becoming of ever greater importance to the performance of the total transportation function in Canada.
>
> A meaningful foothold has been gained by the railways in the trucking industry but ownership and control of their segment of the industry does not as yet approach a condition of restriction of competition, let alone "undue" restriction of competition.[154]

Thus Canadian experience with permissive rail ownership of trucks and other modes has belied the fears that led the U.S. to stress modal separation. Not only has it had positive efficiency benefits in Canada but as Heaver concludes:[155]

> The railways have been able to participate in the growth of the trucking industry and have been able to perform their less than carload (LCL) common carrier obligations more efficiently than would otherwise have been the case. The existence of trucking subsidiaries allowed the rail operations to drop LCL services. Both the CN and CP hope that further integration of their express services with their trucking operations will lead to more efficient and profitable services.
>
> The railway-owned trucking companies have provided leadership in Canada in efficient management practices, for example, in their concern for costing procedures. These advantages have become less evident as a number of large trucking companies with sophisticated and innovative management have developed. However, since a number of the large firms are foreign-owned, the development of the large Canadian and railway owned trucking companies may be perceived in Canada as providing the benefit of significant national ownership in an important industry.

> These benefits have been realized while there is no evidence that railway ownership of trucking is having any adverse effects on the nation's transportation system. It is not leading toward the development of monopoly powers, nor is it likely to do so. It has not been associated at any time with the railroads discriminating in favour of their affiliated companies. There is no evidence that the availability of nation-wide trucking and rail services is providing the railway owned companies with an advantage in negotiating with large shippers.
>
> In sum, the Canadian experience with the railway ownership of trucking has been positive and is likely to continue to be so. Railway ownership of trucking is not now a significant issue in Canada.

This is another instance where Canadian policy has influenced that of the U.S. in transportation matters.

On the other hand, the Canadian concern for intra-modal competition was heightened by the airline deregulation in the U.S. in 1978, the rail and truck deregulation Acts of 1980 and their apparent benefits — some of which spilled over into Canada. In fact, these U.S. intra-modal initiatives were quickly followed in Canada by a new transportation framework entitled "Freedom to Move" dated July 1985 which formed the basis for the new *National Transportation Act* (NTA) in 1987 which, among other things, asserts that important economic objectives are likely to be achieved "when all carriers are able to compete, *both within and among the various modes of transportation* [emphasis added]" — a sharp change from the previous stress on intermodal competition. Other aspects of the NTA follow similar features embodied in the U.S. legislation.[156]

In this sense, Canada was the first nation to embody "greater reliance upon competitive forces" into legislation in 1967 but the U.S. was first to deregulate intra-modal transportation.

It is now evident that, as far as the general policy of more reliance on market forces is concerned, both inter- and intra-modal competition is required. If competition is capable of being most effective where the firms involved have quite similar products and cost structures, as competition theory indicates, then it was folly from the outset in the U.S. to have attempted to thwart this, especially in air, truck and bus transport. Intermodal competition

where firms produce products of quite dissimilar characteristics and have vastly different cost structures, is apt to have specialized advantages for particular kinds of travel or traffic allowing spheres of modal monopoly power, without intra-modal competition therein. These were the so-called "inherent advantages" that the U.S. sought to preserve by its abridgment of the most effective competition, namely intra-modal. There was also much concern that the newer forms of transportation — air, truck and bus — in the 1920s and 1930s would need protection from rail predatory behaviour to develop their natural niches in the total transportation market. There was also concern that the regulated railways, suffering financially during the depression, needed some protection against the new modes not then subject to regulation and control. In this way "competitive equality" was joined with "preservation of inherent advantages" of each mode as rationales for the twin aspects of policy namely, modal separation and intra-modal regulation.

The problem with both of these was that they were based upon static views of both technology and inherent advantages. As the economy grew and changed, the relative importance of the quality elements became far more important than relative marginal cost differences among the modes for both travellers and shippers (higher values of time, comfort and convenience for passengers and just-in-time deliveries for shippers, for example). New technologies responded to these changes and also reduced the need for separate modal ownership and operations (for example, TOFC, COFC, RO-RO [Roll on-Roll off] etc.) as complementarities among the modes began to grow in importance, eroding the "inherent" differences which turned out to be less than immutable.

At the same time, the fear of rail predation against the other modes turned out to be vastly exaggerated. In all these experiences and trials, both countries learned from each other. Both intra- and inter-modal competition need to be free for maximum potential benefits.

Other differences between the U.S. and Canadian approaches to national transport policy may provide certain lessons for each country. On a very general level and subject to many caveats, Canadian policy is more centrist, deliberate and proactive whereas the U.S. is less centrist, more pragmatic and reactive.

In Canada, the federal government was closely bound up with railways from the start. In fact, construction of the railways was part of the deal for Confederation. In the U.S. the private sector was first involved, and the states and municipalities bribed, cajoled and otherwise sought to control rail development as much as possible through their territories. The U.S. federal government only later was involved in helping finance rail development.

In the U.S., central government acts mainly after it becomes clear that states or cities want it to on particular issues and/or when states cannot effectively act individually. Thus the *Act to Regulate Commerce, 1887* came after some states had already instituted railway regulation and were subsequently enjoined by the courts from regulating interstate commerce which was growing very rapidly. In Canada there was no doubt from the outset that rail regulation was a federal affair. Similarly in trucking, the U.S. regulated because the bulk of the business by the mid-1930s was interstate and the federal government had reluctantly became deeply involved in highway finance prior to the first highway Act in 1916. The Canadian federal government deliberately stayed out of interprovincial trucking regulation even though it was authorized to do it (Part 3 of the NTA of 1967) and left that authority to the provinces partly because of awareness of the messiness that similar regulation had caused in the U.S.

Of course, in both countries the role of the central government increased relatively since the early 1930s in transportation and elsewhere. In general, this creates national standards in such key areas as transport and health, and thus, there will be a tendency toward state, provincial and regional equality. This may not be very efficient however. For example, the U.S. interstate highway system was built to the same standards throughout the country regardless of actual or potential traffic. Nevertheless such national standards ensure that the poorest states and provinces will not fall progressively behind the more affluent in important aspects.

Both countries are now yielding to more state and provincial autonomy in part due to relative failures of economic policy at the federal levels, ideological trends to "conservatism," states-rights and the like, but largely due to huge federal deficits. If not pushed too far, this provides the opportunity for a variety of experimentation with policies in transportation and elsewhere that may yield valuable lessons more significant than forcing all into the mold of homogeneous national standards. To paraphrase President Kennedy, it may be beneficial to keep the nation safe for diversity.

In the final analysis, the greater apparent centrism and deliberateness in Canada with respect to transportation policy may not make much difference because the relative average size of each province to the total nation is many times larger in Canada than the U.S. (e.g. 10 provinces compared with 50 states). Thus, regardless of the degree of apparent centralization of power, the actual importance of the individual provinces in Canada on average is much greater than the individual state in the U.S.

LESSONS FROM THE U.S. EXPERIENCE

One is impressed that over longish periods of time the U.S. government has responded reasonably well to the dynamics of population growth and movement, technological changes and other shifts in the economy that have sometimes belatedly, sometimes prematurely been recognized. To be sure, few of the investments or subsidies have been thought of strictly or even casually in economic terms, but none of them have been totally unwarranted. Too much rail investment was probably stimulated by the land grants in the 19th century. Highways and airways have generally had excess capacity since the late 1920s. These may suffer from selected bottlenecks at present, due to increased use arising from inadequate user-charges and generalized economic and population growth. However, except for some more or less substantial rail disinvestment, abandonment of some early canals, building the interstate system with the same capacity throughout the country regardless of potential traffic in specific regions, and some airway and airport capacity problems, capital or public expenditures have not been wasted in transportation, despite the emphases upon defence, national cohesion and nation-building earlier. In some more recent cases, public reticence to expand capacity is more of a problem than capital extravagance.

It is in the realm of regulation that obviously uneconomic decision making has taken place in the U.S. transportation sector. Economic regulation of a particular industry by a separate, independent commission is something not to embark upon lightly. Even if the objective is to restrict excess profits and remove discrimination, and otherwise reduce the static welfare loss which itself is not the major waste involved, far more is required than rate of return and/or price regulation. The regulatory body must be prepared to control entry and exit, to monitor a structure of prices, to ascertain a reasonable proxy for marginal cost of specific services, to control service offerings and qualities, to monitor finances, to have some say in new

investments and acquisitions and, in fact, to become informed of and involved in virtually all aspects of the companies being regulated. It is not possible to select one or two variables and gear policy to these alone, expecting to make the performance of the industry more efficient without substantial costs to society both direct and indirect. Nor is it possible to stimulate what may be crucially important, namely the "entrepreneurial spirit." The "dead hand" of bureaucracy, political gamesmanship and the like are apt to divert attention from economic matters. Even single-firm monopoly cannot be regulated in terms of allowable rates of return without unwanted side effects such as inefficient production, expense padding and other aspects of the so-called A-J-W effect.[157] How much more complex it is to seek to regulate dozens or even hundreds and thousands of firms, as the ICC did following the *Motor Carrier Act of 1935*, with their varying cost and service characteristics, different capital intensities and other special features. The attempt to regulate such a hodge-podge is bound to fail if the objective is efficiency or the achievement of non-economic goals at least cost and the maintenance of some spirit of enterprise and risk-taking.

The experiment with industry-specific economic regulation has failed in the U.S. The message worth conveying to other countries is not to embark upon such a venture except in the context of safety. If the country is already regulating, it should begin the reform process with emphasis upon efficiency. Certainly it should not regulate to protect government-owned and operated railways. Canada does not need this lesson since federal regulation was never invoked for motor carriers. Provincial regulation, however, is not much better and should be reduced to at most a standard of "fit, willing and able" to new applicants offering a particular service.

In cases where, for political or less often, economic reasons, there is some propensity to regulate or regulations already exist, antitrust criteria should be applied. This, in turn suggests that "regulation" might best be left with the antitrust authorities, even in situations of true natural monopoly. Where antitrust or anti-combines laws are weakly enforced, as is the case in Canada, they should be strengthened and applied more frequently in such a manner that the business community becomes acutely aware of the consequences of violating the competitive standards. The consequences need to bear higher penalties than apply at present in Canada although the competitive implications of the Free Trade Agreement should be positive. If the antitrust laws are so weak or weakly enforced that they have little deterrent effect

upon anti-competitive business practices, it may be necessary for a specific industry to be directly constrained by a separate commission or board. If so, efficiency in the market sense should be the overwhelming criterion. The legislation should be precise, should give the board little discretion or opportunity to develop a "grand design," and its powers subject to a sunset rule after a decent interval in which an assessment of the performance of the industry is made and side effects evaluated.

Aside from the very few instances where the government owns and operates a productive enterprise which cannot be largely privatized, the rule should be that of a market economy. It should be monitored by strict antitrust laws vigorously enforced and should include a set of charges for use of publicly provided right-of-way and carefully applied effluent and congestion taxes so that social and private costs can be made to coincide as closely as possible. Under these conditions, competitive market forces will tend to bring about efficient outcomes, be responsive to consumer demands and flexibly adjust to changes in technologies, input prices, incomes, tastes and preferences. There will still be plenty for the government to do, but the microeconomy should be able to provide for the demands of the populace with a minimum of overt intervention but with continuous vigilance. The government can then devote more time to performing better on the macroeconomic level and concentrate on doing those things more appropriate to its capabilities.

THE MESSAGE FOR PASSENGER TRANSPORTATION

Canada led the U.S. in the general policy change area in transportation and indeed set a good example to follow. However, the U.S. led in a perverse direction with respect to rail intercity passenger transportation in creating Amtrak in 1971. Just six years later, and following the miserable example of the first five years of Amtrak's existence, Canada copied the U.S. "solution" to the rail passenger deficit problem. The results were pretty much predictable. Rail passenger service in both countries is largely uneconomic and its continued provision with subsidy jeopardizes the development of bus service in areas of low-density traffic and wherever both rail and bus competition exists. If some rail service is to be preserved, beyond the urban-suburban areas where it is essential for commuting purposes and where it is correctly viewed as part of the entire urban problem that goes far beyond mere transit, it will have to be confined within heavy-density corridors. In Canada this rules out any of the super high-speed alternatives with maximum

speeds approximating 300 mph and most of the alternatives in the range much above 125 mph as well because of lack of traffic density and the huge capital costs of the required exclusive rights-of-way.

As Soberman has suggested, higher speeds can be obtained on the Montreal-Toronto corridor in the 112–125 mph range which might offer some prospects of economic feasibility. But this would have to be accompanied by "improved reliability, and twentieth century passenger handling, ticketing and reservation systems."[158] Some large investments in existing track, electrification along with tilt-train technology and improved communication systems would be necessary to achieve even this modest speed range. However, these investments might prove economically viable and the resultant three-hour service on the Montreal–Toronto run should be attractive. A similar situation exists in most of the U.S. corridors being considered although several of them may have sufficient density to warrant experimentation with the facilities designed for the higher speed ranges well above 125 mph, already achieved in regular service and higher still in experimental runs, over 300 mph.

The point to emphasize, however, is that maintaining rail intercity transportation options to provide access to remote areas or regions without any other public transportation alternatives is self defeating. Since the rail service is subsidized, this inhibits development of at least some unsubsidized bus alternative. It is not the sort of operation suitable for rail in the first place; it is not part of railroads' "inherent advantage." Clearly, this is an inappropriate reason for Amtrak's or VIA's existence although it is often given as a rationale. Whatever future they may have cannot be confined to such inherently uneconomic service for it jeopardizes a better and cheaper alternative, namely, bus transport. Since neither Amtrak nor VIA can become the nationwide systems they once were, high-density corridor business is all that remains where subsidy could be minimized if not eliminated. Even here, the prospects are bleak unless much more is invested in providing higher speeds.

The U.S. now requires the ICC to investigate bus owner complaints of predatory pricing by the subsidized Amtrak and to take steps to prevent it. That seems to be the least that should be done so as not to discourage more competitive development of the bus alternatives in various regions and for the specific clientele that has always typified bus travel. If subsidy

is to be given, its benefits would doubtless be larger, per dollar of subsidy, if provided for bus operations that were deemed necessary or desirable, if not efficient, to serve otherwise isolated regions or to provide at least some access for those unable to drive or afford their own vehicle.

"Some elements of the system clearly must disappear," Soberman concludes with respect to VIA Rail.[159] This applies to Amtrak too. It is merely a question of choosing which parts to eliminate, if not the entire operation, in the interests of a viable and competitive intercity *national* passenger system. The Doyle Report had it right even before Amtrak.

SOURCES OF COMPETITION IN INTERCITY PASSENGER SERVICE

If VIA or Amtrak are confined to corridor service, where abundant competitive forces both among and within modes already exist, what will ensure competition in the other segments of intercity passenger traffic? The private automobile provides much of the answer because of the ubiquity of the highway system. If rail service disappears from all but a few corridors, this leaves only bus and air service elsewhere. However, bus and air are scarcely competitive in the same markets. There is some complementarity but not much overlap. Bus transport will dominate over short distances and air over long. Each caters to a different clientele. Thus competitive forces in the lower-density intercity markets will rely primarily upon intra-modal rivalry. Some intermodal competition between air and bus may occur with the use of commuter-type planes or, perhaps later, tiltrotor aircraft. Further development of "intelligent vehicle-highway systems," linking "smart cars" with "smart highways" may significantly improve bus performance characteristics as well, (e.g. "smart" buses). This is highly speculative. But the future possibilities do hold out some prospects for enhanced competitiveness between these two modes for distances below say, 200 to 300 miles. Clientele may overlap depending upon relative costs. In the meantime, intra-modal competition will have to suffice.

Technically speaking, both modes have most of the features required for effective or workable competition. This was indeed the entire basis for deregulating the airlines in the first place. The same is true for the bus industry despite its penchant for high levels of aggregate concentration even when federal regulation was not overly restrictive because of benign neglect. It is because of the need to rely on intra-modal competition in each,

that the recent tendencies toward monopoly power in air and the perpetuation of concentration in the bus industry should be viewed with more concern. The problem in bus transport lies mostly with state or provincial regulation. Efforts to reform these constraints should be encouraged by the federal governments in both countries. The situation is more serious in air and will require strong remedial efforts already noted in Section 6. However there is nothing to suggest the need to return to the past cartel-type of arrangement in either industry. Nor are the prospects for more competitive behaviour unpromising. The view that competition is obviously workable in each industry should elicit appropriate responses to ensure that it is made to do so.

The "open-skies" movement and the Free Trade Agreement also provide prospects for increased competitiveness. Policy now needs to refocus explicitly upon the passenger side of the transportation market and concentrate again on air and, perhaps for the first time in any major sense, upon the bus industry. This Royal Commission itself is evidence of the new concern for passengers vis-à-vis freight and it is hoped that the emphasis will continue upon efficiency criteria à la MacPherson.

The regulatory reform process is not over.

There is a problem with respect to very low-density travel involving small communities which would not generate enough traffic on a regular basis to warrant either scheduled service or more than one carrier even with small, say 10 to 12 passenger buses, or commuter aircraft. The preferred solution will vary from case to case but efficiency cannot rely on competition among carriers eager to enter the market or actually offering service. Rather, service will need to be provided by non-profit organizations or contracted for through competitive bidding and financed with at least some public funds. In northern, remote regions of Canada where some rail services exist they may validly be continued even at a loss but the costs could probably be reduced "by eliminating VIA Rail as the middleman and having Transport Canada contract directly with the relevant railways."[160] Several alternatives are available that could sharply reduce costs even though overall profitability is unlikely.[161]

THE ISSUE OF SUBSIDY

General subsidies for multi-product enterprises serving diverse markets normally lead to inefficient pricing, especially in the contestable submarkets where below marginal cost prices create unfair competition for the

non-subsidized competitors. But passenger transportation services to remote, peripheral or sparsely populated and/or poor communities may not be profitable nor financially sustainable, except through subsidy. In such cases (and where the political authorities decide *some* level of service is needed in the public or social interest), an operating subsidy that makes up the difference between the revenues derivable from a specified service level and the avoidable costs under honest and efficient management would be warranted. Such subsidy will also be efficient as long as it is route-specific and the avoidable costs of the subsidized service are lower than any other mode or operator could achieve for comparable service levels. Contracting for such services is desirable along with close monitoring of the results.

Various subsidized route-specific services exist in Canada and the U.S., including in Saskatchewan, Pennsylvania and Maine, where experience has shown that close examination is necessary before specifying any management program for establishing additional subsidized services.

There is nothing inherently wrong with subsidies provided the goal they seek cannot be achieved more efficiently by any other means, including reliance on market processes. Too often societies have sought to benefit some group, such as poor or disadvantaged people in outlying regions, by non-specific subsidies, or general cross subsidization by large enterprises in the transportation industry. The costs associated with these subsidies go far beyond the amount paid, as they cause serious price and cost distortions elsewhere in the system. Furthermore, the so-called benefits do not meet the primary needs of the groups for which they are intended. The benefits of transport subsidy are essentially a system of partial income supplements tied to consumption of a specific good or service. These can be provided more efficiently to the recipients without causing distortions that could have wide ramifications within a particular industry. Income supplements, if made directly to recipients, preserve their freedom of choice. Cheaper transportation may have little impact on poverty levels or the quality of life of disadvantaged or poor people since the subsidy is confined to travel only which is often only a small subset of needs.

OTHER MESSAGES AND LESSONS

I began this essay by noting that three major themes had dominated the evolution of transportation policy in the U.S.: (1) Inconsistency and ad hocery, (2) Dominance of freight transport over passenger, and (3) Changing role of

economists.[162] The policy changes since the late 1970s are not only the latest episode in these themes but they may have altered them in important respects.

(1) *Inconsistency and ad hocery:* One of the major contributions of regulatory reform in transportation has been to raise the consciousness of the public to the superior organizing properties of competitive markets and the opportunity cost concept. This provided impetus for reform in other industries as well, including communications, banking, insurance, brokerage, power, gas and oil transmission, and others. Indeed, every area subject to some form of pricing and entry or exit constraints has been under increasing pressure to ease or eliminate them and to allow more discretionary and flexible decisions by individual companies. In short, regulatory policy virtually everywhere has adapted to competition by allowing more competitive-like behaviour and practices hitherto disallowed. Not all have been as successful as in transportation. One only needs to be reminded of the savings and loan debacle, although that was a case of botched deregulation. Most reforms have resulted in real savings to the consumer, greater efficiency and flexibility of firms to respond quickly to changing circumstances.

But the widespread understanding that efficient pricing and market orientation coalesce and that therefore much of the previous anti-competitive and anti-market regulations were not only superfluous but absolutely wasteful as well, means that one aspect of inconsistency and *ad hocery* in transportation policy in the past has been removed. Policy can no longer be completely open-ended as to purpose. Whatever the purpose, we now demand to know the cost and whether the purpose can best be achieved through anti-market manipulation of the transport industry or by some other less costly means. Even national defence is now expected to be cost effective! Whatever the purpose, stability, national cohesion, defence, etc., will not be pursued without an assessment of costs involved compared with alternative mechanisms.

Thus, for example, it is doubtful whether the *Act to Regulate Commerce* in 1887 could be enacted today. The evil sought to be remedied then was discrimination of various kinds. The first section of the Act declared that all rates be "just and reasonable" and the next three sections specified various kinds of discrimination that were unjust and unreasonable — essentially place, personal and long- and short-haul discrimination. The

present approach to such a situation, assuming the antitrust laws would not suffice, would be to increase competitive pressure by facilitating new entry of firms producing similar services. Of course, any private actions to fix prices and artificially exclude entry would be declared illegal as they are now under existing antitrust statutes. In no way would the current approach provide a small group of commissioners with power to cartelize such a huge industry in its entirety. Whatever solution were adopted today would be consistent with market forces not counter to them. Clearly, no commission would be allowed to attempt any grand design as did the ICC or to organize the scheduled airlines into a more effective oligopoly as did the CAB.

For Canada it is likewise apparent that the Crow's Nest Pass rates legislation would not be enacted again, not only because its stated purpose had long since been accomplished but also because of the mechanisms for railway redress recommended in the MacPherson Report and especially because there now exist more direct, more effective and less costly ways of accomplishing similar objectives. The same goes for the *Maritime Freight Rates Act*. Certainly, subsidy to passenger transport would not be allowed to piggyback, so to speak, upon freight revenues as already apparent in the creation of VIA and the general philosophy and emphasis on efficiency and market orientation. There are simply more effective and less costly ways of accomplishing the objectives of these three policies than were followed for many decades in Canada. National policy will henceforth not require higher real costs of transportation as the major instrumentality.

Thus transportation policy including investment policy can be expected to be more consistent in the sense that economic analysis will be given higher priority than before and efficiency criteria, "market conformability" and cost effectiveness will dominate. That does not mean that mistakes will not be made. Even proficiently handled benefit-cost analysis is no more than a guide to public investment and there are plenty of ambiguities in determining marginal costs, appropriate user charges and the like. However, policy should be expected to be based at least on reasonable economic analyses and data and less warped by such notions as the "grand transport mystique," the special status of being a "public utility" or a "natural monopoly" because of some alleged economies of scale properties and so on. With the present transportation options facing both travellers and shippers, there is no reason to single out the area for

treatment any different from other industries. Thus transport policy can avoid much of the ad hocery and inconsistency of the past. We can hope, for the sake of efficiency, it will do so.

(2) *Dominance of freight transportation:* The uniqueness of the passenger business, as distinguished from freight, has now been assured by the separation of rail passenger service from goods movement. This is not yet complete but will be whenever Amtrak obtains more of its own right-of-way or is confined to that which it already has. Aside from this, there is no major transportation enterprise handling both large numbers of passengers and large amounts of freight in the U.S. Assets are largely dedicated to one or the other and operations and ownership for the most part are separate. For the first time this permits the inherent differences between the two industries to receive exclusive attention by all modes in the U.S. Furthermore, future transportation technologies such as maglev, high-speed rail, "smart" cars, tiltrotor aircraft are all passenger-oriented. While some are adaptable to freight (e.g. "smart" trucks), most are unique to passenger travel in the sense that they emphasize smoothness and comfort of the ride, as well as speed, dependability and safety which are arguably more important for passengers than for most freight. Freight transport technologies are likewise moving in their own more distinctive directions so that the differences between the two can be expected to widen. This will, of course, mean that any future policies toward transportation must specify either passenger or freight and not casually assume that because problems arise in freight transport their resolution should *ipso facto* apply to passengers, as has been the case in the past. As noted earlier, the creation of this Royal Commission is evidence that passenger service is no longer considered an unavoidable but unwanted stepchild of freight operation.[163] It is an important industry in its own right and sufficiently different from freight that even in rail transport it can no longer be viewed as a by-product.

If VIA is to continue, it will have to be given its own trackage over important route segments or at least over all routes it is expected to operate in the long run. The more complete separation of both ownership and operation from freight is essential for a valid test of whether there is any viable future for rail intercity passenger traffic in Canada and where that might be. If VIA cannot do it with ownership and operation rights and substantial freedom to price and market efficiently, then it should be closed down and its services leased to the highest bidder for one more

try. Part of the lesson of Amtrak implies substantial track ownership and control in the most important, heavy-density corridors and as complete a separation from freight operations as possible. Clearly any new higher speed passenger services will have dedicated and specialized track.

(3) *The changing role of economists:* Since the transportation industries, including both freight and passenger, are now pretty much viewed as not fundamentally different from other industries producing either goods or services, microeconomists of all stripes can continue to study them without feeling guilty about invading the terrain of "transportation economists," as if that connoted some special expertise or knowledge about some unique type of economic activity. In fact, as noted earlier, the period when the economic case for regulatory reform was being fully developed and later implemented, involved the return of more general economic theorists to the study of transport problems. With the legislative successes now under their belts, there is some danger that microeconomists might drift away from transportation as they did after the late 1920s.

I doubt whether this is likely. More and more economists have had a taste of the area and have become involved with engineers and computer specialists in modeling various aspects of, for example, traveller choice, optimal routing, to say nothing of monitoring the consequences of the regulatory changes that have already taken place, the new patterns of price discrimination including Ramsey pricing, hub dominance, the net benefits already achieved and so on. There is much to do theoretically, empirically and in terms of systems-type modeling that intrigues most of the new generation of mathematically sophisticated and computer-literate economists.[164] Thus I see little prospect of neglect of the field merely because issues of regulation have more or less been resolved and part of the battle for improvement has been won. As Schumpeter long ago remarked: "specialists in applied fields, mostly in . . . transportation, had got further" than others in understanding price discrimination. He cites Hadley's, *Railroad Transportation*, 1886 as being the first to show that rate discrimination "may improve the situation of all parties concerned, including the one that is discriminated against."[165]

The study of transportation has contributed much to economic theory. As Baumol and Bradford note, the "general line of argument (regarding optimal departures from marginal cost pricing) has appeared widely for

the better part of a century. The formal theorems date back more than forty years — this work has appeared in some of our leading journals under the authorship of some of the luminaries of our profession and was clearly not limited to a backwater of the literature."[166]

But if the study of transportation has contributed much to economic analysis the reverse is also true. Again it is Schumpeter who points out that "Any decent theory of cost and price ought to be able to make valuable contributions to railroad economics, and railroad economics ought to be able to repay the service by offering to general theory interesting special patterns and problems. . . . There are great possibilities in a co-operation of economists and engineers . . . few fields offer such possibilities as obviously as does the railroad business."[167]

It is just this close mutuality of interests and cross fertilization that ensures that transport will remain an active field of research for professional economists. Benign neglect is unlikely to recur even with the diminished interest in regulation.

This is true in Canada and indeed in most other countries. Some of Canada's most prominent economists have devoted much time to transportation issues and continue to do so. The Canadian Transportation Research Forum, the Canadian Institute of Guided Ground Transport and many other groups of economists, engineers and computer scientists are actively engaged in transportation matters to say nothing of the many university institutes, majors and courses devoted to the subject. In this sense, Canada has nothing to learn from the U.S. If U.S. economists played a decisive role in the deregulation movement in the U.S., which demonstrably they did, it was mainly because such a highly visible role and attainment of high-level positions of administrative influence was necessary given the strength of the resistance to change compared with that in Canada. Both countries are thus well endowed with economists sufficiently concerned with transportation that the efficiency flag may be expected to keep flying for several decades at least or until some more grandiose paradigm displaces it.

ENDNOTES

1. Thomas K. McGraw, *Prophets of Regulation* (Cambridge, Mass.: Harvard University Press, 1984), p. 305.

2. Special Message to the Congress on Transportation by President Kennedy, The White House, April 5, 1962.

3. National Transportation Policy Study Commission, *National Transportation Policies Through the Year 2000* (Washington, D.C.: Government Printing Office, 1979).

4. Ibid., p. 43.

5. For an elaboration, see George W. Wilson, *Economic Analysis of Intercity Freight Transportation* (Bloomington, Indiana: Indiana University Press, 1980), pp. 274–81.

6. *Royal Commission on Transportation* (The MacPherson Report) (Ottawa: Queen's Printer, 1961).

7. Ibid., Vol. 1, p. 17.

8. Ibid., p. 43ff.

9. For example, the ICC might hold rail rates well above those of barge lines to preserve the latter in case of military necessity. Such "protection" of a higher cost mode was called "umbrella rate making" and was one of the major problems tackled by *The Transportation Act of 1958,* discussed in section 4.

10. George W. Wilson, *Economic Analysis of Intercity Freight Transportation,* p. 280.

11. U.S. Department of Commerce, Office of the Federal Coordinator of Transportation, *Passenger Traffic Report* (Washington, D.C.: Government Printing Office, 1936).

12. M. Farris and H. Harding, *Passenger Transportation* (Englewood Cliffs, N.J.: Prentice-Hall, 1976), p. 241.

13. George W. Wilson, "The Relative Importance of Economic Regulation of Transportation *vis-à-vis* Everything Else," in *Economic Regulation: Essays in Honor of James R. Nelson,* edited by Kenneth D. Boyer and Willaim G. Shepard (East Lansing, Michigan: Michigan State University, Division of Research, 1981), pp. 24–25.

14. George W. Wilson, *Essays on Some Unsettled Questions in The Economics of Transportation* (Bloomington, Indiana: Foundation for Economic and Business Studies, Indiana University, 1962).

15. See George W. Wilson, "Economic Analysis of Transportation: A Twenty-Five Year Survey," *Transportation Journal,* Fall 1986.

16. Some have even gone so far as to translate passenger-miles into ton-miles by converting passenger weight, including baggage, into tonnage to obtain a presumed homogeneous unit of "stuff" to be moved various distances.

17. See the last issue of *Transportation Facts and Trends,* Transportation Association of America, December 1974.

18. Mark Hansen, "U.S. Intercity Passenger Transportation Policy: 1806–1990," in *Canadian Transportation Policy*, edited by David W. Gillen (Kingston, Ontario: John Deutsch Institute for the Study of Economic Policy, Queen's University, April 1990), p. 22.

19. Some states have bumper stickers that read, "Welcome to X. Please go home!"

20. See F. W. Taussig, "Railway Rates and Joint Costs Once More," *Quarterly Journal of Economics*, February 1913; F. W. Taussig and A. C. Pigou, *Railway Rates and Joint Costs*, ibid., May 1913.

21. Cited in George W. Wilson, "Economic Analysis of Transportation: A Twenty-Five Year Survey," p. 35.

22. Alfred E. Kahn, Civil Aeronautics Board, 1974.

23. The pricing freedom was only partial in that it applied to traffic where the railways involved did not have "market dominance" and where they were deemed not to be "revenue adequate" overall. Needless to say the ICC attempted to construe these terms so narrowly that the rate freedom provisions of the *Staggers Rail Act* would have been largely nullified. In this, the Commission failed. In fact, it soon relented as new Commissioners were appointed or former Commissioners not replaced, leaving a majority in favour of the deregulatory initiatives made all the more pressing under President Reagan's broadside attacks on regulatory restraints of virtually any kind.

24. J. M. Munro and G. W. Wilson, *Road Transport: History and Economics*, Indiana Readings in Business, No. 35, (Bloomington, Indiana: Bureau of Business Research, School of Business, Indiana University, 1962), p. 55.

25. *Federal Aid Road Act, 1916.*

26. Mark Hansen, "U.S. Intercity Passenger Transportation," p. 27.

27. J. M. Keynes, *The Economic Consequences of the Peace* (New York: Harcourt, Brace and Howe, 1920), p. 9.

28. Thomas K. McGraw, *Prophets*, pp. 4–5.

29. See A. M. Milne and A. Laing, *The Obligation to Carry* (London: Institute of Transport, 1956), which is the classic study on the issue. For recent applications of the common carrier obligation see P.M. Shannon, Jr., "The Common Carrier Obligation in an Unregulated Environment," *Transportation Research Forum Proceedings*, 1980, pp. 476 ff.

30. I. L. Sharfman, *The Interstate Commerce Commission* (New York: The Commonwealth Fund, 1931), Vol. 3, p. 617–27.

31. Donald M. Itzkoff, *Off the Track, The Decline of the Intercity Passenger Train in the United States* (Westport, Connecticut: Greenwood Press, 1985), p. 30.

32. D. R. Owram, "Icons and Albatrosses: Passenger Transportation as Policy and Symbol in Canada ," in Volume 3 of this report.

33. Pennsylvania Truck Lines, Inc.–Control-Barker, 1 M.C.C. 101, 1936.

34. 79 Congressional Records 12206, 1935.

35. H. G. Moulton, "Fundamentals of National Transportation Policy," *American Economic Review*, December 1933, pp. 33–46 and *The American Transportation Problem* (Washington, D.C.: The Brookings Institution, 1933).

36. United States Senate, Special Study Group on Transportation Policies in the United States, *The Doyle Report: National Transportation Policy* (Washington, D.C.: Government Printing Office, 1961), pp. 221–22.

37. National Transportation Policy Study Commission, *National Transportation Policies Through the Year 2000*, p. 255.

38. *Royal Commission on Transportation*, (The MacPherson Report), Vol. II, p. 82.

39. Ari Hoogenboom and Olive Hoogenboom, *A History of the I.C.C.: From Panacea to Palliative* (New York: W. W. Norton, 1976), p. 110.

40. U.S. Department of Commerce, *Passenger Traffic Report*, p. 16.

41. Ibid.

42. Ibid., p. 7.

43. Ibid., pp. 1, 7, 26–28.

44. Donald M. Itzkoff, *Off the Track*, p. 13.

45. This is vividly portrayed in D. Itzkoff, *Off the Track*, pp. 15–18.

46. Ibid., p. 18.

47. George W. Wilson, "The Effect of Rate Regulation on Resource Allocation in Transportation," *American Economic Review*, May 1964.

48. For an elaboration of both "stories" see G. W. Wilson, *Economic Analysis of Intercity Freight Transportation*, chapters 1, 2 and 3. Referring strictly to demand see G. W. Wilson, "Notes on the Elasticity of Demand for Freight Transportation," *Transportation Journal*, Spring 1978, and references cited therein.

49. Cited in Munro and Wilson, *Road Transport*. p. 67.

50. *Historical Statistics of the United States*, (Washington, D.C.: Government Printing Office, 1975), Vol. II, p. 769.

51. George W. Hilton, *Amtrak* (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1980), Table 1, pp. 3–4.

52. See Thorstein Veblen, *The Engineers and the Price System* (New York: The Viking Press, 1983), first published 1921.

53. Thomas K. McGraw, *Prophets*, p. 210.

54. See James M. Landis, *The Administrative Process* (New Haven: Yale University Press, 1938).

55. Hoogenboom, *A History of the I.C.C.*, p. 143.

56. The Hosmer Report, p. 72 (Reference No. 3, Table 1). See also George W. Hilton, "The Hosmer Report: A Decennial Evaluation," *I.C.C. Practitioners' Journal,* Vol. XXXV, No. 3, 1969, pp. 1472–73.

57. For a particularly illuminating comment on the efforts of the railroads at this time see D. Itzkoff, *Off the Track,* pp. 30–40.

58. George W. Hilton, *The Transportation Act of 1958* (Bloomington, Indiana: Indiana University Press, 1969), p. 13.

59. Hoogenboom, *A History of the I.C.C.,* p. 144.

60. Interstate Commerce Commission, *The Regulatory Issues of Today,* 1975, p. 2.

61. Cited in George W. Wilson, "Regulation, Public Policy, and Efficient Provision of Freight Transportation," *Transportation Journal,* Fall 1975, p. 8.

62. Interstate Commerce Commission, *First Annual Report of the Interstate Commerce Commission, 1887* (Washington, D.C., 1887), pp. 30–31.

63. Citations from Hoogenboom, *The History of the I.C.C.,* p. 150.

64. Jeremy Bentham (1748–1832) was the founder of utilitarianism in its more contemporary form. Briefly, this involves the attempt to measure the "pleasures" and "pains" or, in modern terms, the "benefits" and "costs" of any change in laws, regulations or specific decisions such as those made in every case before the ICC. The Benthamite notion was that one could somehow add up the benefits and costs of any action or decision and, if the former exceeded the latter, the decision was deemed good, desirable or a net improvement in welfare, and vice versa if the latter exceeded the former. Bentham hoped to be able to devise a metric, say units of utility and disutility, by which one might be able to aggregate and quantify the results of any decision — a kind of felicific calculus by which laws, decisions, etc., could be changed or reformed so as to contribute to the "greatest good of the greatest number or maximum net welfare or benefits." Although such a metric has yet to be devised and interpersonal utility comparisons are illegitimate, most economists have found that benefit-cost analysis of, say, public investments are extremely useful in making more rational decisions about them. Such analyses are direct offsprings of Bentham's attempt to create a more rational, positive and normative social science and indeed a basis for a rational moral, ethical and legal code. For a brief exposition, see Scott Gordon, "Utilitarianism," in *The history and philosophy of social science* (London: Rutledge, 1991), pp. 248–70.

65. George W. Wilson, "The Effect of Rate Regulation on Resource Allocation in Transportation," *The American Economic Review,* May 1964, pp. 167–68.

66. U.S. Department of Commerce, *Modern Transport Policy; Documents Relating to the Report of the Presidential Advisory Committee on Transport Policy and Organization and Implementing Legislation* (Washington, D.C.: Government Printing Office, 1956). (The Weeks Report).

67. George W. Wilson, "The Weeks Report Revisited," *American Economic Review,* March 1959, pp. 130–31.

68. George W. Hilton, *The Transportation Act of 1958,* p. 204.

69. Interstate Commerce Commission, *Railroad Passenger Train Deficit*, Docket No. 31954, Decided May 18, 1959, p. 479.

70. Ibid., p. 484.

71. George W. Hilton, *The Transportation Act of 1958*, p. 118.

72. Cited in ibid., p. 119.

73. Interstate Commerce Commission, *Railroad Passenger Train Deficit*; Report prepared by Howard Hosmer, Hearing Examiner, et al., ICC Docket No. 31954, 1959. (The Hosmer Report).

74. Civic Aeronautics Board, Reports to Congress, *Annual Report, 1977* (Washington, D.C.: United States Government Printing Office, 1978), pp. 140–43.

75. For some data and discussion see Interstate Commerce Commission, *The Intercity Bus Industry* (Washington, D.C., May 1978), and Transportation Policy Associates, *Transportation in America*, 2nd ed. (Washington, D.C., 1984).

76. Interstate Commerce Commission, *The Intercity Bus Industry*, p. 45.

77. Ibid., pp. 93–97.

78. The Weeks Report, pp. 1–3.

79. See for example, S. Huntington, "The Marasmus of the I.C.C.: The Commission, the Railroads, and the Public Interest," *Yale Law Journal*, April 1952; M. Bernstein, *Regulating Business by Independent Commission* (Princeton: Princeton University Press, 1955); and many others.

80. United States Senate, Special Study Group on Transportation Policies in the United States. *The Doyle Report: National Transportation Policy* (Washington, D.C.: Government Printing Office, 1961).

81. Ibid., p. 38.

82. Ibid., pp. 155–57.

83. Ibid., p. 31.

84. Ibid.

85. Ibid., p. 161.

86. Ibid.

87. Ibid., pp. 434–35.

88. Ibid., p. 322.

89. Ibid.

90. Ibid., p. 323.

91. Ibid.

92. Ibid., p. 326.

93. Ibid.

94. Ibid.

95. Thomas K. McGraw, *Prophets*, p. 206.

96. The Doyle Report had this to say about multiple considerations that the ICC felt it had to examine (as noted earlier in Section 4 of this study) as an aspect of the "grand design": "Further, because there are so many factors to be taken into account by the I.C.C., from a national policy aspect as well as from the aspect of the relative importance of the conflicting evidence adduced in connection with any particular application, the I.C.C. can decide almost any case just about as it pleases and, by leaning upon, first, one aspect, and in another case, upon another aspect of our transportation policy, successfully withstand almost any scrutiny of the courts." (The Doyle Report, p. 124.)

97. U.S. Department of Transportation, U.S. Federal Railroad Administration, *Report on the Potential for Integrating Rail Service Provided by the National Railroad Passenger Corporation with Other Modes* (Washington, D.C.: Government Printing Office, 1976).

98. Hoogenboom, *The History of the I.C.C.*, p. 164.

99. U.S. Department fo Transportation, U.S. Federal Railroad Administration, *Report on the Potential for Integrating Rail Service*, p. 2.

100. Ibid., p. 4.

101. Cited in Department of Commerce Memorandum, July 16, 1964 entitled "Summary of Legislative Activities Growing Out of the President's Transportation Message of 1962."

102. George W. Wilson, *Economic Analysis of Intercity Freight Transportation*, p. 272.

103. *Economic Report of the President*, January 1966, (Washington, D.C.: Government Printing Office), p. 128.

104. Bradley Behrman, "Civil Aeronautics Board," in *The Politics of Regulation*, ed. James Q. Wilson (New York: Basic Books Inc., 1980), p. 90.

105. For details and a methodological critique see G. W. Wilson, *Economic Analysis of Intercity Freight Transportation*, pp. 236–50.

106. Martha Derthick and Paul J. Quirk, *The Politics of Deregulation* (Washington, D.C.: The Brookings Institution, 1985) p. 38.

107. Ibid.

108. George W. Wilson, Memo, June 1966.

109. Robert C. Lieb, *Transportation*, 3rd ed., (Reston, Virginia: Reston Publishing Company, 1985), p. 47.

110. This story has been well detailed in several important sources, and will only be briefly related here. See McGraw, *Prophets*, chapter 7; Derthick and Quirk, *The Politics*; and James Q. Wilson, (ed.), *The Politics of Regulation* (New York: Basic Books, 1980), chapter 3.

111. Cited in McGraw, *Prophets*, p. 267.

112. A-J-W stands for the initials of the three authors, H. Averch and L. Johnson, "The Firm Under Regulatory Constraint," *American Economic Review*, December 1962, and S. Wellisz, "Regulation of Natural Gas Pipeline Companies: An Economic Analysis," *Journal of Political Economy*, February 1963. The "A-J-W effect" refers to the conclusion of these authors that rate of return regulation of a monopolist producing a single homogeneous product and seeking to maximize absolute profits will lead to resource misallocation in the sense that more capital, relative to labour, will be used than is needed for efficient production if the allowable rate of return is set between the opportunity cost of capital and the unconstrained maximum profit rate of return. A substantial literature grew up following these seminal articles in the early 1960s, most of which has little relevance to transportation regulation. For details see G. W. Wilson, *Economic Analysis of Intercity Freight Transportation*, pp. 186–98.

113. Alfred E. Kahn, *The Economics of Regulation* (New York: Wiley, 1970), 2 vols.

114. Passenger-mile data from U.S. Dept. of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1990*, 110th ed., (Washington, D.C.: Government Printing Office, 1990), p. 597: Data on number of trips refer to vacation trips only. See Steven A. Morrison and Clifford Winston, "The Demand for Intercity Passenger Transportation," *Transportation Research Forum, Proceedings*, 1983, pp. 526–34.

115. See U.S. *Bus Regulatory Reform Act*, U. S. Congress Public Law 96-261, 1982.

116. For details of these efforts see Edward L. Ramsdell and Imogene R. Burns, "Current Trends in the Health and Structure of the Intercity Bus Industry," *Transportation Research Forum, Proceedings*, Vol. xxvii, no. 1, 1986 and Clinton V. Oster and C. Kurt Zorn "Franchising as a Response to Increased Competition in the Intercity Bus Industry," ibid., p. 59 ff.

117. Oster and Zorn, "Franchising," p. 60.

118. Ibid., pp. 64–65.

119. See Itzkoff, *Off the Track*; Hilton, Amtrak; L. E. Tobey, "Costs, Benefits, and the Future of Amtrak," *Transportation Law Journal*, Vol. 15, 1987, pp. 245–302 and many others.

120. For details see Hilton, *Amtrak*, pp. 15–17, Tobey, "Cost Benefits," pp. 253–57.

121. U.S. Department of Transportation, U.S. Federal Railroad Administration, *Report on the Potential for Integrating Rail Service*, p. 39.

122. Ibid.

123. U.S. Public Law 94-280, 1976.

124. National Transportation Study Commission, *National Transportation Policies Through the Year 2000* (Washington, D.C.: Government Printing Office, 1979), p. 250.

125. A. E. Kahn, "Deregulation: Looking Backward and Looking Forward," Yale Journal on Regulation, Vol. 7, no. 2, Summer 1990, especially pp. 340 ff. Lieb, *Transportation*, Table 15-1, p. 317 shows a higher average number of carriers on various route types in July 1983 than July 1978: Adrangi, Gritta and Chow show reduced concentration levels for the industry as a whole by three major indicia of concentration for the post-deregulation period 1976–1985 in "Deregulation and Concentration in Air Transportation," *Transportation Research Forum: Proceedings*, Vol. xxvii, no. 1, 1986, p. 6 ff.

126. A. E. Kahn, "Deregulation," pp. 343–44.

127. Ibid., p. 348.

128. *The Economist*, July 20, 1991, p. 82.

129. For a sympathetic and reasonable case see Tobey, "Cost Benefits."

130. Itzkoff, *Off the Track*, p. 131 citing the Executive Director of the Pennsylvania High Speed Intercity Rail Passenger Commission.

131. J. B. Hopkins, "Innovative Technology for Intercity Passenger Systems," in *Passenger Transportation in High-Density Corridors*, SPA-90-1. VNTSC, Cambridge, Mass., November 1990, p. 6.

132. M. Walrave and A. de Tessieres, "The French TGV System — Achievements To-Date and Future Developments," *World Conference on Transportation Research, Proceedings*, 1986, Vol. 2, pp. 1063–81.

133. U.S. Department of Transportation, "Assessment of the Potential for Magnetic Levitation Transportation Systems in the United States," June 1990, pp. 17–18.

134. Ibid., pp. 301–02.

135. In Steven A. Morrison, "The Value of Amtrak," in *Canadian Transportation Policy*, edited by David Gillen, p. 104.

136. Ibid., p. 110.

137. U.S. Department of Transportation, *Moving America, New Directions, New Opportunities* (Washington, D.C.: Government Printing Office, 1990).

138. Ibid., p. 2.

139. Ibid., p. vi.

140. Ibid., p. 26.

141. Ibid., p. 43.

142. Ibid., p. 51.

143. Ibid., p. 53.

144. Ibid., p. 105.

145. Hansen, "U.S. Intercity Passenger Transportation," p. 21.

146. *New York Times*, June 20, 1991, p. 1.

147. Senator Daniel Patrick Moynihan, "Senate Overwhelmingly Passes Revolutionary Surface Transportation Act, 91-7," News Release, June 19, 1991, p. 1.

148. Fred P. Nix, "Road-user Costs: Report on Exploratory Research," *Journal of the Transportation Research Forum*, Vol. XXX, no. 1, 1989, pp 18–27; and Peter Bein, "Canadian Experience with HDM3 in Road Transportation Management," ibid., pp. 9–18.

149. For details see Nix, "Road-user Costs," and George W. Wilson, *Economic Analysis of Intercity Freight Transportation*, pp. 91 ff.

150. Nix, "Road-user Costs," p. 26.

151. Interestingly enough the resurrection of Ramsey pricing was first in connection with efficient highway user-charges. See A. A. Walters, *The Economics of Road User Charges*, World Bank Staff Occasional Papers, no. 5, 1968, pp. 115–17. W. J. Baumol and D. F. Bradford, "Optimal Departures from Marginal Cost Pricing," *American Economic Review*, June 1970, facilitated the revival of Ramsey pricing.

152. This is not of course unique. The U.S. has viewed various aspects of Canadian policy as worthy of emulation. The most recent illustration is in the realm of medical and health insurance. But historically Canadians have seen themselves as, perhaps too often, followers of the policies and activities of the large, influential giant to the south. It is only in this sense that the transportation policy change in 1967 can be seen as paradoxical or at least one of a limited number of cases where Canada was well ahead of the United States in a major shift of public policy. The sequence is usually the other way around.

153. It could not be proved, for example, that greater reliance on market forces would improve things for shippers, travellers or many carriers. This was a theory about which no one could be absolutely certain. As such it was fair game for opponents to allege that those advocating the changes were "academics," most of whom had "never met a payroll" or misguided individuals with no personal stake in the outcome who did not mind experimenting with other peoples' interests.

154. Canadian Transport Commission, Motor Vehicle Transport Committee, *Report of Investigation and Decision, Pursuant to Section 27 of the National Transportation Act, in the matter of an objection by the Trucking Association of Quebec Inc. to the proposed acquisition of Chalut Transport (1974) Inc. by Canadian National Railways indirectly through its subsidiaries*, Decision No. MV-27-32 (M-76-2), June 1976, Appendix I.

155. Testimony before the Interstate Commerce Commission, Finance Docket No. 30500, "Norfolk Southern Corporation — Control — North American Van Lines, Inc.," Vol. III, filed August 1984, pp. 00149–00150.

156. For some of these see Trevor D. Heaver, "The Changing Role of Government Intervention in Canadian Transportation," Centre for Transportation Studies, University of British Columbia, April 1988 (mimeographed).

157. For an outline and elaboration see Wilson, *Economic Analysis of Intercity Freight Transportation*, pp. 187–207 where the A-J-W effect and other theories of regulatory consequences are discussed.

158. Richard Soberman, "Canadian Passenger Transportation Policy," in *Canadian Transportation Policy*, edited by Gillen, p.14.

159. Ibid., p. 17.

160. Ibid, p. 16.

161. See for example, Richard M. Soberman and Adil Cubukgil, "A Model for the Privatization of Rail Passenger Services in Canada," *Proceedings of the Canadian Transportation Research Forum*, May 1989, pp. 111–23.

162. See section 1.

163. Paraphrase of statement by Joseph B. Eastman in preface to U.S. Department of Commerce, *Passenger Traffic Report*.

164. See C. Winston, "Conceptual Developments in the Economics of Transportation: An Interpretive Survey," *Journal of Economic Literature*, March 1985 and Wilson, "Economic Analysis of Transportation: A Twenty-Five Year Survey," for examples along these lines.

165. Joseph A. Schumpeter, *History of Economic Analysis* (New York: Oxford University Press, 1954), p. 978.

166. William J. Baumol and David F. Bradford, "Optimal Departures from Marginal Cost Pricing," p. 277.

167. Schumpeter, *History*, p. 948.