Volume Title: Transportation Economics

Volume Author/Editor: Universities-National Bureau Committee for Economic Research

Volume Publisher: NBER

Volume ISBN: 0-87014-308-5

Volume URL: http://www.nber.org/books/univ65-2

Publication Date: 1965

Chapter Title: Introduction to "Transportation Economics"

Chapter Author: John R. Meyer

Chapter URL: http://www.nber.org/chapters/c7049

Chapter pages in book: (p. -7 - 0)

Introduction

JOHN R. MEYER

HARVARD UNIVERSITY

The occasion of publishing the proceedings of a Universities-National Bureau Commitee Conference on Transportation Economics seems an appropriate moment to evaluate the general state of transportation economics, as a profession, science, art, or however one may view it. Perhaps the first and most obvious observation is that some revival of professional interest has occurred in transportation economics. Though once a very large recipient of professional attention, transportation could hardly be construed a major interest of economists from approximately 1930 to the middle of the last decade. During that period other matters, quite rightly, were deemed more worthy of professional study, the business cycle being the most obvious new focus of attention. In a very broad sense, transportation and other microeconomic problems went into abeyance as professional attention turned to macroeconomic problems. Furthermore, as firms in other industries grew larger and government became more and more involved in many different aspects of national life, the historic confrontation of big transportation firms and government became, at least relatively, less important.

It would be bold, though, to suggest that any revival in transportation economics has proceeded very far or has been markedly new in character. The rise in interest that has occurred almost certainly represents, in large though not exclusive measure, an almost classical response to the challenges posed by very immediate, public policy issues. These issues in many respects reflect older and long-standing policy problems, though with some new departures. One of the more dramatic and newer issues is the nearly total deterioration in labor-management relations within the railroad industry; some have gone so far as to characterize this deterioration as the most serious challenge yet posed to the institution of collective bargaining in American economic life. Another important set of public policy issues has been created by the serious financial difficulties, in many cases near or actual bankruptcy, of several major transportation companies; it is perhaps all the more significant that these financial difficulties have occurred not only in the oldest of the regulated transportation industries, railroading, but also the newest, the airlines. Closely related to these financial problems is the revival of interest in still another old policy issue, the proper role of mergers in regulated industries. Finally, another problem of long standing, urban congestion, considered of little major concern for public policy in preceding decades, suddenly has elicited a substantial concern at virtually all levels of government. This interest has been stimulated by the accelerated rate of change of urban location patterns which, in turn, is related to the development of new intracity transportation technologies associated with the internal combustion engine.

Revived interest in transportation economics also may have been stimulated by the coming to power of a new generation of transportation managers. This, of course, has been evolutionary rather than revolutionary, but the rate of change has been quite marked in the last decade. The change takes different forms in different transportation industries. In the airlines it has meant the emergence of a "second generation" of management that has replaced the original, and often highly colorful, pioneers who established the industry in the nineteen thirties and forties. In railroading the change has been the rise to top management of a group that grew up with the industry in its period of greatest adversity, as contrasted with predecessors who often first came to the industry at a time when it still enjoyed a considerable monopoly position. In general, the new management would seem to be more strictly professional and, most importantly, somewhat more oriented toward profit, as contrasted with public service or regulation in its thinking. In keeping with these trends, which correspond to somewhat similar trends in industry in general, transportation managements have become increasingly more receptive to outside advice and, indeed, have increasingly sought such advice. One source, among many, of such advice has been professional economists with interests in costing, operations research, and marketing problems.

Without much question, this volume, for better or worse, reflects this state of transition in both the industry and the economics profession. There is a bit of the old and of the new throughout. Every effort has been made, moreover, to find good representation of all interests, new and old. Whether or not this effort is deemed successful by the individual reader, it does seem certain that, again for better or worse, this volume is fairly representative of the present state of the art or science of transportation economics.

The volume is divided into four major parts, roughly corresponding to four major themes. Two, the first and the last, are of long-abiding interest to transportation economists: costing and public policy. The other two are relatively new: the nature and implications of technological change for transportation and urban transportation problems.

As noted, old and new ideas are to be found in every topic. For example, even in Part I, concerned with the old, classic concern of costing and the uses of cost data, some significant new departures are reported. The papers by J. R. Nelson, R. J. Gordon, and G. Kraft, are particularly relevant in this regard, all three almost certainly being controversial in some of their innovative tendencies.

Nelson, for instance, traces the dynamic interactions between transportation costs, prices, and the private prosperity or difficulties of individual transportation companies. His analysis begins with the late nineteenth century and proceeds to the present day. He hypothesizes that it is the dynamic interactions between transport prices and costs that best explain certain long-standing paradoxes in transportation history, such as the widespread prevalence of a profitless prosperity in railroad securities in the late nineteenth century.

Gordon, by contrast, is much more concerned with the contemporary problem of the depression in airline earnings that occurred in the early 1960's. He argues, quite persuasively, that much of the recent adverse earnings experience of the U.S. domestic trunk airlines is due to a failure of their managements to properly control costs. In particular, he feels that some of the larger domestic trunk lines have been slow to adjust expenses to match variations in travel demands. An implicit corollary is that the financial difficulties of the airlines in the early 1960's should, in most cases, be short lived, being correctable by either bringing costs more in line with requirements or by holding costs relatively constant in the face of future improvements in traffic—or by some of both.

Kraft is concerned with a very thorny issue, empirically, theoretically, and for public policy. This is the determination of the extent, if any, of the relationship between advertising outlays and growth of business volume for an industry or a firm. His particular focus is the case of airline advertising expenditures. Because of difficult identification problems, no conclusive answer seems possible to the question he poses. Kraft is always confronted with the problem of specifying whether increased advertising outlays are caused by improved business or vice versa, the actual answer almost certainly being some of both. He does, though, produce an estimate of advertising effects which might be most accurately portrayed as a maximum or upper limit estimate of the potential impact of advertising expenditures on business volumes. He also develops some tentative policy implications based upon this estimate.

More conventional in approach are the other three papers in the initial section on cost data and uses. M. J. Roberts presents a definitive statement of the point of view that transportation rates, specifically railroad rates, should be considerably less regulated in the interests of economic efficiency. His arguments are based primarily on static considerations and therefore are, not surprisingly, challenged mainly (though not exclusively) on dynamic grounds. Specifically, a clear difference of opinion obviously exists on the relative importance to attach to these different considerations, static and dynamic, and the locational-investment implications of transport rate policies, when arriving at public policy decisions.

More empirical in character is the W. J. Stenason and R. Bandeen paper which reports on what is probably the most elaborate and complete statistical cost study yet made. This study, done jointly by the Canadian Pacific and Canadian National Railroads and jointly designed by Stenason and Bandeen as representatives of their respective railroads, was a major submission made by the Canadian railroads to the recent Canadian Royal Commission on Transportation. Besides its thoroughness, the hallmark of this study was its imaginative use of data on system subcomponents to estimate maintenance of way-cost relationships.

In the last of the cost studies, Harbeson revives, with a careful study of recent urban-rural division of highway funds, the very old argument of whether "over-all system" or specific sector needs as measured by use should be dominant in determining allocations of state and federal highway funds. Obviously, the actual or practical divisibility of highway construction technology is most important in the final evaluation of this point, as the two discussants of the Harbeson paper point out either explicitly or implicitly. Clear-cut differences may also exist on less tangible but strongly held beliefs about what constitutes a desirable incidence of highway benefits between urban and rural users.

The second major part of the volume, concerned with problems of investment, innovation, and technological change, incorporates two papers dealing with very different aspects of these subjects, though in both cases heavy emphasis is placed on the implications of an accelerated rate of technological change for certain basic policy problems in transportation economics. Mansfield is concerned with answering for the railroad industry such questions as: at what rate has productivity been increasing, what has been the rate of diffusion of innovations, who has made these innovations, what prospective and recent changes in technology seem most promising, and what the probable impact of future innovations will be upon railroad employment. His projections of future developments, particularly for employment, will surprise at least some readers and, at a minimum, will be somewhat controversial.

The second paper in this section, that by M. J. Peck and J. R. Meyer, attempts to adapt a modern capital budgeting approach to assessing the old problem of determining a "fair return" for regulated industries. The paper also incorporates some comparative empirical data on the performance of different transportation companies and industries in recent years; these comparisons are based upon estimates using both capital budgeting measures and conventional administrative or regulatory concepts for measuring the returns on capital in regulated industries.

Part three contains four different yet complementary papers on urban transportation. The first of these, by J. F. Kain, represents an effort to empirically test a simple theory of economic behavior as it relates to the commuting and residential decisions of central business district workers. Kain, in his model, hypothesizes several different cost trade-offs being available to an urban commuter when making his joint decisions on residential location and commuter modal choice. The most important decision is considered to be the trade-off between housing and transportation costs. Kain also incorporates a number of socioeconomic variables, such as family status, number of employed persons in the family, and racial characteristics, into his model. Some of his conclusions, particularly those concerning the implications of race and the regressive fiscal character of urban transport subsidies, are bound to be contested by many.

Controversiality also characterizes the second paper in the urban transportation section, Vickrey's on "Pricing as a Tool in Coordination of Local Transportation." Vickrey suggests that departures from marginal cost pricing principles in urban transportation have much to do with explaining the existence of certain urban transportation problems. He also presents empirical estimates, strongly contested by some, of the extent of these discrepancies. In a similar vein, that of applying more rigorous economic analyses to urban problems, Kuhn discusses the potential applicability and also limitations of employing more formal capital budgeting procedures in transport planning for urban areas. Finally, Healy discusses certain problems of formulating a sensible urban transportation policy under today's circumstances. He argues for a greater sense of perspective about urban transportation policy; in particular, he challenges assumptions of the continued importance or even existence of high-density urban cores.

The fourth and final section of the volume deals with the *pièce de sustenance* of all transport economists, issues of public policy. These range widely from the question of labor "featherbedding" to common carrier regulation. The first paper, by R. A. Nelson and W. Greiner, discusses the relevance of the common carrier under modern economic conditions. Specifically, they argue that much of modern regulation of common carriers is not at all concerned with achieving economic rationality, but, instead, is often quite consciously undermining the achievement of economic efficiency in order to serve other objectives of public or social policy.

The second paper in the public policy section, by J. C. Nelson, deals with "The Effects of Entry Control on Surface Transport." Nelson presents considerable documentation for the view that the economic costs of certain common carrier regulatory practices are quite high. In fact, he leaves a clear impression that he considers these costs of sufficient magnitude to call into question the entire propriety of continued regulation as now practiced, at least of entry controls to common carriage.

The paper by J. Dunlop deals with the difficult labor and work rule problems which have been at issue for some time between railroad managements and the rail operating brotherhoods. He outlines the historical genesis of the problems and summarizes some of the more important recent findings by a Presidential Railroad Commission (of which he was a member) established to study railroad operating employment practices. Dunlop relates the manpower problems of the railroad industry to a broader context of similar problems encountered elsewhere in the economy. He presents a six-point program or set of suggestions on how the needed manpower adjustments in the railroad industry might be expeditiously effectuated.

The final paper in Part IV touches upon virtually all major issues of public policy but within the specific context of the Canadian experience. The author is F. W. Anderson, staff director for the recent Canadian Royal Commission on Transportation. It would appear that Canada's transport problems are not too dissimilar, at least conceptually, to those encountered in this country, although some quite significant special circumstances are to be found. Particularly interesting divergences are encountered in Canada's problems of regional development and the movement of grain from the Canadian Prairies to lake ports for export.

In sum, considerable diversity is to be found in this volume—diversity both in topics covered and points of view expressed. This is perhaps not surprising when dealing with a technology and set of institutions changing as rapidly as those in transportation do. Somewhat surprising, though, may be the strength and vigor with which the many participants defend their particular viewpoints. This too may be symptomatic of change if the following quotation from an earlier economist is an indication of earlier professional practice:

> The expense of maintaining good roads and communications is, no doubt, beneficial to the whole society, and may, therefore, without any injustice, be defrayed by the general contribution of the whole society. This expense, however, is most immediately and directly beneficial to those who travel or carry goods from one place to another, and to those who consume such goods, The turnpike tolls in England, and the duties called peages in other countries, lay it altogether upon those two different sets of people, and thereby discharge the general revenue of the society from a very considerable burden.[1]

Obviously, if a positive, distinct point of view assiduously advanced is a sign of self-confidence and consensus, transportation economics may be progressing. On the other hand, allowance perhaps should be made for the possibility that in the absence of full unanimity earlier circumspection had a certain justification.

Special thanks are due to Leon Moses and his staff at the Transportation Center, Northwestern University, for their help in handling the many conference arrangements. In addition, Dr. Moses, who served as conference secretary, handled the bulk of correspondence with authors and discussants during my stay in Europe in early 1963. Other members of the planning committee were G. H. Borts, M. Hoffenberg, J. C. Nelson, J. Stenason, and E. W. Williams.

Some of the conference papers are not included in this volume for various reasons. Most of them have been published elsewhere in one form or another. The authors and original titles are: "An Analysis of the Costs of and Demand for Private Carriage" by Meyer Burstein, "An Economic Evaluation of Different Modes of Military Airlift" by William Niskannen, "The Spatial Structure of the American Economy" by Benjamin Chinitz, "Transportation and Economic Development"

[1] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Random House, Inc., 1937, p. 767.

by Louis Lefeber, "Cost Estimation, Capital Budgeting and Transportation Planning in Underdeveloped Countries" by Robert Brown, and "A Survey of the Current State of Public Policy and Research in the Transportation Industry" by Ernest Williams.

The papers presented here were prepared for press by Margaret T. Edgar and Joan Tron. H. Irving Forman drew the charts.