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The Economics of Highway Planning

By

DAVID M. WINCH

Canadian Studies in Economics, No. 16
Toronto: University of Toronto Press. 1963.
Pp. x, 166, $3.95

Seldom are the writings of economists called "exciting," but to thoughtful travelers who have watched the present highway program of the United States gain momentum there cannot help but be a ring of excitement about the title chosen for this book. Certainly this feeling begins to grow when one reflects upon the economic and social consequences of many of the questions involved in modern highway planning. For example, what criteria persuade the highway department to build a new expressway on a new location instead of widening the existing road on an old location? Where does the traffic from Main Street go when a new bypass route is opened? Who benefits from these new highways? How much should heavy trucks pay in order to contribute their fair share of the road-builder's bill? In legislative debates, public hearings, and editorial columns of the press these questions are posed, argued, and answered in the name of sound economic analysis and sound highway planning. The hard truth is, however, that as often as not the economic analysis relied upon has not been sound, and the highway planner has been bypassed in the process of legislative and administrative decision-making.

In *The Economics of Highway Planning*, Dr. Winch states that his object is "to provide a framework for decision-making" by presenting a "rigorous framework of analysis, or technique of thinking, by which rational decisions can be made concerning the complex problems of planning an optimum highway system."[1] He begins by laying down various definitions of and premises about the costs of highway transportation and the demand for highway transportation facilities. There follows a discussion of the concept and technique of planning analysis, in which the author sets forth his own recommended approach for analysis and evaluation of competing project proposals. The final portion of the book takes up, in turn, the major problems of financing highway programs, the criteria

1. P. 149.

for formulating an optimum schedule of taxes or charges for highway use, and the administrative structure and methods that have been developed for carrying on the interrelated business of highway planning and financing. In all of this the author warns that he has "omitted some of the more abstruse theoretical controversies"[2] concerning welfare economic analysis in order to render his approach more comprehensible to the laymen and practicable of application. Also, throughout his discussion the author postulates perfection in such regards as the completeness and accuracy of data, and optimum conditions for such factors as traffic volumes, revenue collections, and the like. In an appendix, Dr. Winch concedes the unreality of using idealized criteria for measuring highway cost and demand when it is clear that highway administrators must build highways in and for an imperfect economy, but he defends his approach, arguing that the best solution in practice is the closest approximation to the theoretical optimum, and the best yardstick for comparison of alternative plans is a precise formulation of what constitutes the optimum solution.

The heart of Dr. Winch's proposal calls upon the highway planner to lay out roads (and upon the administrator to see that they are built) where they yield the greatest excess of benefits over costs while carrying their optimum volume of traffic. "Costs," in this analysis, include not only those borne by the public highway agency, but also the costs of vehicle operation, highway users' time, and those costs which fall on the community at large. "Benefits" refer to those enjoyed by the highway user.

The author's fellow economists may presume to criticize this approach in terms of its consistency with prevailing doctrine of theory and practice;[3] more pertinent here, perhaps, is a comment on the extent to which the author has achieved his objective of presenting a technique which the engineer and administrator can use. In this regard, one should first note the types of decisions calling for analysis of the economics of highway planning. Certainly such analysis is relevant in establishing route locations and highway system classifications, assigning particular highway projects to particular highway systems, and determining the structural or design standards to be used for specific projects. Indirectly they may well affect decisions on such operational aspects of highway programs, as maintenance, or regulation of vehicular sizes, weights,

2. P. x.
3. See, *e.g.*, comments in 65 Amer. Econ. Rev. 504-06 (1964).

and speeds. In an earlier time all of these were matters which legislators dealt with directly; now, however, they are increasingly becoming matters which highway administrators decide in accordance with standards accompanying their delegated authority. Other questions in which economic considerations must be weighed, but which legislators still prefer to decide directly, involve the levying of so-called highway user taxes, and determining policy regarding authorization of toll facilities and bond financing.

It is likely that lawyers will feel uneasy at the suggestion that questions such as these should be decided on the basis of the technique outlined by Dr. Winch. On the policy-making level, at least, these decisions have not been and are not now being made solely on the basis of economic analysis, and there is little reason to believe that lawmakers and administrators will, in the foreseeable future, make economic analysis the basis of their major decisions in highway planning. At the policy-making level, decisions which control highway planning are made after considering various non-economic and often non-rational considerations as well as purely economic factors. Such matters as establishment of highway systems, authorization of toll facilities, and revision of motor fuel tax rates, necessarily have to be treated as political questions as well as economic matters.

Using the establishment of highway systems as an example, how are these factors now recognized in the criteria prescribed by the legislature for assigning mileage to the state primary highway systems? State laws variously provide that this system shall promote interconnection of county seats of municipalities which are population and market centers, achieve integration of the state's road network, "accommodate the greatest needs of the people," "contribute to the development of commerce and industry," and, in a few cases, serve the largest volume of traffic.[4] These standards, which constitute the legislature's mandate to the planner, say nothing about the economic advantage that these roads must show in order to qualify for designation, and appear irreconcilable with the rigidly disciplined technique and the carefully defined terms insisted upon by the economist. This dilemma has consistently presented economists with an obstacle to any proposal for greater (or, at least, more open) use of economic criteria in highway policy. Dr. Winch

4. Legislative criteria for designation of state primary systems are discussed in Highway Research Board, Highway System Classification, Part I, at 15-22 (Special Report 42, 1959).

recognizes this difficulty and describes it in terms of arbitrariness and rationality in the decision-making process, as follows:

> Many of the decisions which must be made are matters of opinion and the economist as an economist, cannot offer advice on these. He must limit himself to a rational course of action based on given values. Many articles have been written attempting to justify better highways in terms of economic advantages and from the standpoint of community welfare, defense, safety, and so on. In doing so the writers have made many value judgments which have no place in economic theory. Such arbitrary opinions have been attacked by welfare economists as being without rational foundation. Welfare economics has performed valuable service by destroying the invalid, but has substituted no alternative rational basis of decision-making which does not involve value judgments.[5]

This self-imposed limitation presents one of the most difficult parts of Dr. Winch's work, for if welfare economists continue to insist that they cannot dilute their analysis with non-rational factors, and lawmakers continue to insist that these factors must be considered in highway planning, what ground has been gained toward the author's objective of more rational and economically sound decision-making where planning is concerned? Like most matters that involve changing the lawmaking process, one should not expect extensive change in the technique of planning analysis to come quickly or easily. In this case, it is clearly unrealistic to expect that legislatures will be persuaded to enact laws declaring, say, that highways will be assigned to particular highway systems according to a statutory schedule of benefit ratios. Equally unrealistic is the hope that economic analysis as a distinct step in the administrative decision-making process will be required as a condition of state or federal aid. The author recognizes these facts of life and directs his hopes toward piecemeal introduction of his technique into the highway planning process at the point where technical advice is prepared for the policy maker.

In this respect the author may have materially advanced his cause by providing an excellent primer on the economic factors which bear on highway planning and the technique of using these factors in the planning process. Like all good primers it permits the reader to view the subject broadly, and to compare the essential features

5. P. 9.

of administrative processes rather than their details. Those who are not used to the discipline of tightly-organized economic writing may find the discussion hard reading, and the author might have made it easier for them by incorporating more references to examples of actual highway projects. When all is considered, however, this possible shortcoming cannot obscure the far more important values represented by the author's painstaking discussion and extensive documentation of this work.

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