

Major financial support for federal transportation data programs should be derived from federal-aid and grant funds that are applicable to transportation programs. Remaining program costs should be derived from an equitable system of charges to transportation data users.

IMPLICATIONS OF THE SURVEY FINDINGS

The foregoing conclusions and suggestions imply that a number of follow-up tasks should be performed. The implied tasks are listed below in five categories. First are those suggested for performance by the U.S. Department of Transportation. Tasks in the second and third categories would be performed by groups that would come into existence if all tasks in the first category were carried out. Tasks in the last two groups would generally be performed by any federal agency to which the tasks were applicable.

Tasks for the U.S. Department of Transportation

- Lead the coordination of federal transportation data programs and provide the transportation community with information on the status, content, and availability of data produced by federal programs.
- Identify federal administrative functions and data collection activities that do or can generate useful transportation data, and develop procedures for making such data available wherever such is not now the case.
- Encourage data providers to release representative preliminary data sets in advance of their full release and encourage developers of transportation data to make their respective data sets available in published form.
- Encourage and support the development and proper use of sampling and modeling techniques that are cost-effective for the collection and provision of transportation data.
- Support the establishment of a national forum to represent data suppliers and users in the continuing assessment of user needs and data programs, and support the establishment of a special group for the facilitation of data reference services that include newsletters on data availability.

Tasks for a National Forum of Data Suppliers and Users

- Make a continuing assessment of user needs and recommend priorities and mechanisms for cost-effective improvements that include the filling of existing or imminent gaps in the provision of needed data.
- Address specific data issues that are raised by the U.S. Department of Transportation or other elements of the transportation community and that include the respective data collection roles of the various elements.

Tasks for Facilitation of Data Reference Services

- Develop criteria and specifications for transportation data reference services and promote

the implementation of new reference services that are needed.

- Promote the dissemination of knowledge about existing data sets and publicize the nature of new data sets that become available.

Tasks for Agencies and Organizations That Discontinue Basic Data Programs

- Evaluate the losses and impacts of program discontinuation and give users adequate opportunities to make their views known.
- Develop alternatives for future provision of data now provided by programs whose discontinuation will seriously impair transportation planning and decisionmaking.

Tasks for Federal Agencies

- Collect transportation data primarily through the administrative functions of transportation programs.
- Continue support for the Census of Transportation program, but with assured improvements in timeliness.

Successful accomplishment of the foregoing tasks can provide benefits for many users of transportation data and thereby enhance the planning, development, operation, and maintenance of the nation's transportation systems.

OUTLOOK FOR THE SUPPLY AND REQUIREMENTS FOR TRANSPORTATION DATA UNDER REGULATORY REFORM

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The transportation industry and, in particular, transportation policymakers and analysts have both benefited and been handicapped by the existence of data collected by regulatory agencies for regulatory purposes. They have benefited because regulated transportation companies were required to report very detailed financial and operating data. Because most data supplied for regulatory purposes are a matter of public record, there were few problems with confidentiality. This situation is ideal for an analyst interested in microanalyses of a company or group of companies on the hypothesis that the specifics of the study sample reflect the general case.

On the other hand, the analyst interested in macroanalyses of the transportation universe has been handicapped by a potpourri of statistics that have no common basis of comparison. The detailed regulatory data available can never be satisfactorily aggregated to accurately reflect the transportation universe. Moreover, the availability of the regulatory data has inhibited the development of alternative sources of data that describe the transportation universe. Also, the wealth of micro-observations for the regulated part of the transportation universe has no counterpart in the nonregulated portion of the universe. The Census of Transportation is not, by any means, a complete count. The inhibitions to alternate data sources

have been twofold:

1. A reluctance to increase the already heavy reporting burden of regulated companies. This is evidenced in the legislation authorizing the Census of Transportation, which, at the insistence of the Interstate Commerce Commission (ICC), contains the parenthetical phrase, "(exclusive of means of transportation for which statistics are required by law to be filed with, and are compiled and published by, a designated regulatory body)" (Title 13, U.S. Code, Section 131).

2. Not surprisingly, transportation analysts have concentrated on what they have had rather than what they have not had. Although they have been impeded in many ways by the lack of universe data, they have quite naturally structured their analyses toward what was possible with the available data instead of going through the arduous and mostly futile process of creating and amalgamating a level of demand necessary to develop another data series.

So the situation prior to deregulation was generally that of a great deal of detailed financial and operating statistics based on regulatory data and little information from non-regulatory sources, especially information on the structure and framework of the transportation universe.

Since these deregulation statutes have been signed into law, the data situation has become very confused. Analysts accustomed to the luxury of regulatory data find themselves in an unclear situation.

OUTLOOK FOR DATA SUPPLY

CURRENT REGULATORY DATA

One thing seems clear. The supply of data from regulatory agencies will be reduced. The extent of the reductions is less clear. For example, the Civil Aeronautics Board (CAB) has recently released the "Regulatory Information Planning Project--Summary Report." The CAB policy is that data collection will support ongoing regulatory requirements only. Among the recommendations are a 40 percent reduction in reporting requirements and a heavier reliance on the private sector, especially in the compilation of passenger origin and destination data. The report also recommends that the CAB maintain its basic air transportation data systems until December 31, 1984.

Interestingly, while the CAB seems to favor a greater reliance on non-government means to obtain various financial and operating data, the private sector is urging continued data collection by the government. In a seminar sponsored by Douglas Aircraft, representatives of manufacturers, financial institutions, airlines, and research firms said that in the absence of government data collection, there would be doubt about the accuracy and uniformity of privately collected data. These doubts, they said, could lead to hesitancy on the part of the financial community to heavily commit itself to the massive capital requirements of the airline industry, a prospect that would seriously jeopardize the future of that industry.

Similarly, members of the ICC staff have stated that the ICC will only collect data required directly for regulatory purposes. Therefore, as its regulatory functions are reduced, its data collection will be reduced. The ICC is currently going through an internal operation of deciding which data series to maintain. Two questions are being asked regard-

ing each data series: How will these data be used by the ICC, and if used, is the use meaningful? If these two questions cannot be answered to the ICC's satisfaction, the data series will be discontinued. Some of these series will probably be revived by or transferred to other agencies, much like the waybill sample was "saved" by the Federal Railroad Administration.

However, the funds that were expended by the regulatory agencies on data aggregation are another matter. Since primary data collection is expensive, this creates a situation where budget plays a much larger role than previously. If data are already collected for a regulatory purpose, it becomes relatively inexpensive to tabulate or otherwise make them available to the public. It is an entirely different situation to collect primary data for information content only.

With respect to the rail and trucking industries, it is too early to tell which data series will be discontinued and how users will be affected. Certain series have already been dropped. The Quarterly Loss and Damage Report and Truck Commodity Statistics are two examples. The ICC is currently going through its internal review and will be announcing its decisions shortly. Any changes will require rulemaking procedures before the change can be implemented, at which time users can make their comments known.

Data Required to Monitor the Effects of Deregulation

Another question relates to the type of data necessary to monitor the effects of deregulation: How will Congress or the ICC know if deregulation has been a relative success, or failure? Apparently, the regulatory reform acts themselves are silent on the issue of data with the exception of continuing the rail waybill sample. Certain studies are required, although it is not clear what data will be needed, if any, and how the data must be aggregated to supply the necessary information content. Do the data already exist, or is further data collection required?

FEDERAL ROLE IN TRANSPORTATION DATA COLLECTION

Regulatory data have over the years developed a wide following of users, both public and private, who have depended on these data sources for a variety of statistical programs and analysis. As a result of deregulation, these users may have to collect their own data, use somebody else's, make do without it, or discontinue whatever it was they were doing with it. Clearly, none of these alternatives is very attractive to any user, public or private. Some of the public users to be affected by the loss of regulatory data are other federal agencies within the Departments of Transportation, Commerce, and Labor. Deregulation did not provide for the legislative authority or resources to continue regulatory data collection programs by any other federal organization. Certainly, from the federal point of view, there is a need to evaluate the future of transportation statistics in the federal government and decide what alternatives are available to those users. To develop whatever new statistical policy will be needed in light of the recent deregulation acts, the federal government should attempt to (a) determine its statistical needs and the justifications for those needs, (b) determine the appropriate authority necessary to meet those needs, and (c) determine what legislative changes may be needed for that authority.

This evaluation can be a good opportunity to not only decide the future disposition of discontinued regulatory data, but also to take a fresh look at transportation statistics as a whole and see if a new approach is in order. To do so is not an easy task. Many problems have already been identified, but the challenge may offer some positive alternatives. For example, consider an organization like the Bureau of the Census as one of the major statistical collecting agencies in the federal government and what possibilities it may offer to the future of transportation statistics. Could an organization like the Bureau of the Census take over the data series supplied by the ICC and CAB without modification? The answer to this question is an unequivocal no. Public accessibility to individual carrier reports would no longer be allowed because of the confidentiality provision that governs all Census data collection and publication. This limitation may be particularly damaging to some users who are interested in analysis of the microdata. However, in the context of a broad approach to transportation statistics, the Bureau of the Census may have something to offer.

The structural transportation universe has never been defined in a statistical summary, although many attempts have been made to estimate it. Title 13 provisions have prohibited the Bureau from including the regulated segment of the transportation industries in the economic censuses or in any ongoing data collection program. If the necessary Congressional mandate was provided, the Bureau has the potential to provide a whole new set of aggregated data for firms engaged in transportation similar to what it does for the unregulated sectors of the economy such as manufacturing. For instance, in addition to the quinquennial Census of Manufacturing, the Bureau also sponsors annual and current data programs such as the Annual Survey of Manufactures, the Current Industrial Reports, and the Manufacturers' Shipments, Orders and Inventories. Structural data such as these are beneficial for macro-analysis and this type of data could be provided for the transportation sector of the economy.

Another possibility is for the U.S. Department of Transportation, as one of the primary users, to take over the collection of transportation statistics. In response to that possibility, the Department has established an Aviation Statistical Task Force to study the possibility of transferring the CAB data programs to the Department, and a similar task force may be necessary for the ICC data program. However, to think that all of the programs can be continued by the Department would be a mistake. In addition to not having the legislative authority, the Department would have no desire to use resources to collect data that are not within the purview of their policymaking role. Such federal users of regulatory data as the Bureau of Labor Statistics and the Bureau of Economic Analysis have needs that may not be compatible with the needs of the Department of Transportation.

PRIVATE-SECTOR INPUT IN THE DETERMINATION OF DATA COLLECTION EFFORTS

Federal data user interests are coordinated and protected by interagency committees; however, the private-sector influence is directed more toward the supply side of the data-gathering effort. The forms clearance procedure of the Office of Management and Budget does provide for respondent and data user comments on proposed survey questionnaires, but how the data collected on a particular

questionnaire fit into an overall statistical program is often very difficult to perceive on a form-by-form or even survey-by-survey basis.

Over the past several years there have been major efforts by user groups to affect the data collection effort. The Transportation Research Board has had nearly annual ad hoc programs with the goal of improving the information base of the transportation industry. Obviously, users have been concerned about the availability of high-quality transportation data. However, if one were to take an honest look at the results of these ad hoc efforts, one would be forced to admit that they have had little impact, despite the sincerity and expertise of the groups and their members. Perhaps these efforts did not have greater impact because they were ad hoc meetings composed largely of data users. Perhaps there needs to be greater interaction between data users and suppliers and on a more formal and regular basis.

A major TRB effort has been the "Identification of Transportation Data Needs and Measures for Facilitation of Data Flows," which is summarized in this Circular. One of the suggestions is the establishment of a national forum "to represent all categories of transportation data suppliers and users and to make continuing assessments of user needs and recommendations for the priorities and mechanisms for improvement of transportation data processes. The forum should be independent of, but responsive to, all major elements of the transportation community in both the public and private sectors."

This proposal for a non-federal, continuing forum of data suppliers and users received the support of about 75 percent of the respondents. Support from private-sector respondents was even higher. This finding is consistent with the conclusions of the TRB Ad Hoc Meeting on Transportation Data held in June 1978.

In a similar vein, one of the results of the June 1980 conference on transportation data sponsored by the Washington Chapter of the Transportation Research Forum was a recognition that data users felt a frustration at their inability to affect the data collection and dissemination process, in order to get the kind of data needed. Out of that conference, the Directors of the Washington Transportation Research Forum are considering establishing a Committee on Transportation Data. One function of this committee would be to explore, in conjunction with other groups interested in transportation data, the possibility of establishing a formal advisory committee on transportation statistics to the federal government.

Generally, advisory groups meet periodically and gather together important non-federal users of federal data and the major federal suppliers and coordinators of data. The Washington Transportation Forum feels that an advisory group of this nature would provide the interaction necessary to stimulate positive changes or at least minimize negative effects on the supply of transportation data from the federal government. It is important to note that an advisory group would be meeting with federal personnel acting in their official capacities. In some respects this is quite different from a national forum that canvasses interested professionals in the transportation field to exchange information and propose new directions.

Perhaps these two separate thrusts will complement each other. A national forum could more clearly isolate the relevant issues and could serve as a basis for advisory group comments to the federal statistical establishment. In any event, it seems evident that a large number of people

concerned with transportation data would like to see a much closer relationship between data users and data suppliers. The Bureau of the Census supports more and better communication and will do whatever it can to be responsive to the concerns of its data users.

In our talks with some data users, preparatory to writing this paper, we noticed a sense that deregulation was going to make it more difficult for the transportation analyst. However, the sentiment was also voiced that if there was any silver lining, it was that this was a good opportunity to take stock of where we stand and proceed to rationalize the available transportation data.

We trust that this opportunity will not pass us by. We trust that the transportation community will deliberate together for the common good and we trust that the transportation community and the federal statistical system can develop the kinds of data needed by both.

INSTITUTIONAL IMPEDIMENTS TO A COORDINATED DATA POLICY

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This paper emphasizes the institutional impediments to a coordinated transportation data policy because that is where the dramatic changes are occurring today. Changes in regulatory processes that generate data, programmatic changes in areas that were a source of data, and most importantly, changes in the sense of scope and scale of the federal role and the federal-local, federal-private relationship—all affect the warrants for data and the needs for data. But, in many ways, the institutional side has always been the most difficult of our problems in transportation data—not the technical aspects of data collection nor the financial issues.

FINANCIAL ASPECTS

Parenthetically, consider, the financial aspects of the problem for a moment, because funding availability appears so often as the apparent roadblock to better data. It is true that there is not enough funding to do all the things that we think need doing—and there never will be. But when the sense of priority is there and when the case for a data program has been well made, the money is there. There are serious problems of assigning priorities and of reallocating funds currently used for less than critical needs. Furthermore, information scientists have not given budget people much help in those areas.

A significant reason for the failure to establish comprehensive transportation information systems has been the generally shared failure of analysts and policymakers to make a sufficiently strong case for the existence of such systems. Many elements in the comprehensive set are expensive to obtain, take long periods of time to develop, and are highly perishable. Consequently serious pre-justification is required.

The most serious technical failure has been the incapacity to approach anything like a substantive cost/benefit capability in regard to particular transportation data requirements. Budget justifications of new initiatives are generally cursory efforts that point out the existence of a data gap and the applications for the information to fill the gap;

however, there is no quantification of the benefit accruing from bringing that information to bear on that application. The difficulties are real. What are the benefits of a good decision versus a bad one? They can be major or minor. What share will better data play in reaching a better decision? The answer is far more tied to the nature of the decision process, the other forces acting on the decision, and the character of the decisionmakers than it is to the capacity to anticipate the prospective knowledge obtained from new data. So perhaps it can be restated that money itself is not the problem, although the capacity to justify spending it may be.

FEDERAL ROLE

The major force driving the institutional shakeup that is occurring is the prevailing philosophy that can be best, or most simply, summarized as "federal divestment." This philosophy has manifested itself in three ways, all important to data development:

1. Federal divestment of roles and functions to the private sector, e.g., deregulation;
2. Federal divestment of roles and functions to local and state governments, e.g., deprogramming and defunding; and
3. Greater use in remaining federal activities of market principles, e.g., user charges.

How does all of this affect data: its supply, demand, cost, and availability? The unfortunate answer is it affects it a lot. The word "unfortunate" is used because data programs have been affected by these policy trends for all the wrong reasons.

Consider the reasons for this effect on data, and why they are all wrong. Federal divestment to the private sector, particularly deregulation, has most affected the warrants, to use the legal term, for federal data collection. The rights to collect data, require reporting, and make data public have often been tied to federal regulatory authority. As that authority has been legislatively diminished, the lawyers often succeed in making data reporting the first casualty. Why is this we might ask.

First, even after extensive deregulation, federal residual responsibility often remains in the sector formerly regulated. At least, continued data would be useful for before-and-after studies and for continued monitoring of the deregulated sector. It is ironic that should we decide to re-regulate in the future, that decision will be made without adequate information. If we collect data on industry only when we regulate it and stop the moment deregulation occurs, then, by definition, the decision to regulate will always be made in ignorance.

Second, a large body of uses has grown up around these data bases that is unrelated to their regulatory or programmatic content. These uses exist precisely because alternative data sources were not developed because of the existence of the regulatory data. Many examples of this problem exist in the transportation sector. The Bureau of the Census historically has been required to avoid duplicating ICC data—data that ICC has now stopped collecting. The uses of CAB regulatory data are probably greater in non-regulatory applications than in the original purposes. Many of the users are other federal agencies.

Third, the divestment to the private sector of the role of providing data will not be sufficient for several reasons, primarily concerning economic