

FEDERAL REGULATION OF DOMESTIC SMALL-SHIPMENT SERVICES—AN ECONOMIC APPRAISAL*

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Domestic small-shipment services¹ have always been an important,² troublesome,³ and controversial⁴ transportation problem for users, carriers, and the federal govern-

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¹The term "small shipment" has no universal definition. Under carrier tariff provisions, there are two concepts, maximum weight and size (parcel post), and residual weight—that is, individual shipments billed weighing less than the weight required for quantity rates (all other carriers). For statistical purposes, the ICC includes only shipments weighing under 10,000 pounds, and the CAB makes no distinction between small and large shipments in published statistics. Unrevised Commission data for 1951 indicates that shipments weighing 300 pounds or less constitute over 90% of the small shipments under 10,000 pounds and about one third of the total small-shipment weight. U.S. BUREAU OF TRANSPORT ECONOMICS AND STATISTICS, ICC, STATISTICS OF SMALL SHIPMENTS, STATEMENT No. 5325 (1953). Small shipments consist primarily of finished products of manufacturing and move in both straight and mixed lots.

The term "small-shipment services" includes services performed for individual small shipments as defined and for a number of shipments concentrated and billed under quantity rates. Services usually consist of assembling, concentrating, interterminal movement of bulk, separating, and distributing processes. Concentrating and separating are performed at times by noncarrier enterprises.

Services are performed by direct carriers (air, highway, rail, water) and are provided by indirect carriers (express, freight forwarder, parcel post), which in part employ the services of direct carriers, particularly for interterminal movement of bulk. Regulated, exempt, and private direct and indirect carriers engage in small-shipment services. Interterminal movement of bulk is performed primarily by regulated direct common carriers.

With respect to regulated carriers only, highway common carriers of general commodities account for about two-thirds of the total weight (individual and concentrated lots), and the parcel post handles about three-quarters of the total shipments, almost all of which are single pieces. Under regulated carrier services, rules, and charges, discernible differences appear by type of carrier in average weight per shipment, weight per piece, and length of haul. Traffic tends to be concentrated regionally, along certain routes, between metropolitan areas, and among a limited number of carriers of each type.

²Small-shipment traffic in recent years (including concentrated lots) is estimated by the writer to exceed annually 1,500,000,000 shipments, which weigh in excess of 125,000,000 tons, a majority of the total shipments of all weights and a less significant portion of total weight shipped.

Small-shipment services are used primarily by business firms (manufacturers, wholesalers, retailers) rather than by individuals. Large firms appear to account for most of the weight shipped.

Individual small shipments are significantly less important to rail and to water carriers as a source of freight revenue than they are to other direct and indirect carriers, which derive from 50 to 100% of freight revenue from small shipments. Concentrated lots of small shipments, however, are an important source of freight revenue for a number of railroads and some water carriers.

³Costs of assembling, concentrating, separating, and distributing per shipment are higher, and user requirements are increasingly more diverse, complex, and urgent, than they are for large shipments. Service to and from small localities is often inferior compared with service between large cities, and sometimes total charges are greater, weight and distance considered.

⁴*Supra* note 3. In addition, rate relationships between small and large shipments have always been controversial. This controversy has affected, and has been affected by, market competition among institutions, or channels of trade, and among areas or localities. Increased carrier competition during the

ment.⁵ The problem primarily involves capacity, organization, and rates.⁶ Federal policy and regulation of small-shipment services has encouraged (1) imbalance in capacity and uneconomic organization of the means of supply; and (2) rates based largely upon demand rather than cost of service. Review of the causes and results of federal policy leads to the conclusion that the public interest will be best served by relaxing regulation.

I

IMBALANCES IN CAPACITY AND UNECONOMIC ORGANIZATION

A. Causes

Capacity and organization of regulated small-shipment services developed without over-all plan⁷ and, in large measure, without reference to technical possibilities or to

past thirty years, particularly between highway and rail carriers, and to a lesser extent between carriers of the same type, has caused considerable controversy, which has, in turn, intensified the controversy about rate relationships and market competition.

⁵Factual and interpretive federal publications which give insight into the evolution of this problem include FEDERAL COORDINATOR OF TRANSPORTATION, MERCHANDISE TRAFFIC REPORT (1934); *Hearings Before the Subcommittee of the Senate Committee on Interstate Commerce on S. Res. 146, Less-Than-Carload Freight Traffic and Forwarder Carload Traffic*, 76th Cong., 3d Sess. (1940); *Hearings Before the House Committee on Interstate and Foreign Commerce on H.R. 3684, Regulation of Freight Forwarders*, 77th Cong., 1st Sess. (1941); *Hearings Before the Senate Committee on Interstate and Foreign Commerce on H. R. 2674, Services of Freight Forwarders*, 79th Cong., 2d Sess. (1946); *Hearings Before a Subcommittee of the House Committee on Interstate and Foreign Commerce on H.R. 5967, Freight Forwarders*, 81st Cong., 2d Sess. (1950); *Hearings Before the Subcommittee on Domestic Land and Water Transportation of the Senate Committee on Interstate and Foreign Commerce on S. Res. 50, Study of Domestic Land and Water Transportation*, 81st Cong., 2d Sess. (1950); *Hearings Before the Senate Committee on Interstate and Foreign Commerce on Bills Relative to Domestic Land and Water Transportation*, 82d Cong., 2d Sess. (1952); Motor Bus and Motor Truck Operation, 140 I.C.C. 685 (1928); Coordination of Motor Transportation, 182 I.C.C. 263 (1932); ICC ANN. REP. (1946 to date); U.S. BUREAU OF TRANSPORT ECONOMICS AND STATISTICS, ICC, HISTORICAL DEVELOPMENT OF TRANSPORT COORDINATION AND INTEGRATION IN THE UNITED STATES, STATEMENT 5015 (1950); *id.*, RAIL-WATER RATE ADJUSTMENTS, STATEMENT 5427 (1954); *id.*, INTERAGENCY RATE ADJUSTMENTS—RAIL AND MOTOR—STATEMENT 567 (1956); CAB ANN. REP. (1944 to date); Railway Express Agency, Grandfather Certificate, 2 C.A.B. 531 (1941); Railway Express Agreement, 4 C.A.B. 157 (1943); Air Freight Rate Investigation, 9 C.A.B. 340 (1948), 11 C.A.B. 228 (1950); Air Freight Forwarder Case, 9 C.A.B. 473 (1948); Air Freight Case, 10 C.A.B. 572 (1949).

⁶Capacity means the ton-miles by type of service (separate demands) which can be produced with given plant and equipment in *particular transport markets*. Capacity is, in part, governed by physical performance resulting from the amount and type of facilities available, but it is also governed by organization—that is, the manner in which the facilities and equipment are employed, including technique and institutional arrangements. Capacity affects direct carriers primarily, while organization affects both direct and indirect carriers.

Rates, unless otherwise indicated, will be understood to mean total charges for performing a service in a particular transport market.

⁷Present capacity and organization of privately-owned and operated regulated direct and indirect carriers developed largely from piecemeal decisions by individuals carriers subject to federal policy and regulation affecting operating authority and control. Concerted action of consequence by regulated carriers has occurred in case of the Railway Express and affects only rail and air express services. The parcel post service developed as a result of decisions by Congress and the Post Office Department. Aspects of the small-shipment problem have been considered by Congress, the ICC, CAB, and other federal agencies in a number of instances, see note 5 *supra*; but a comprehensive plan embracing all types of regulated carriers and agencies has never developed. The CAB appears to be more planning conscious than the ICC, but the scope of Board planning is limited to air services, and the technique and results are highly controversial.

the changing requirements for service.⁸ As a result, there emerged imbalance in capacity and uneconomic organization. The carriers, particularly railroads, have been partially at fault.⁹ Errors of omission and commission committed by regulated carriers resulting in uneconomical operation can be corrected through government regulation, however, so that the situation is principally attributable to irresolute federal action.¹⁰

Federal regulation has also encouraged imbalance in capacity and uneconomical organization in other ways. Present policy is ill-defined and at times vacillating, because the statutes are, in important respects, conflicting, deficient, and inflexible.¹¹

⁸ Technical possibilities include the development of several types of transport, each with distinct service and cost characteristics, and none of which can economically perform all small-shipment services. Additionally, there have been substantial developments in materials handling, outside the scope of this study, which, in large measure, have not been adopted by carriers in their handling of small shipments, nor have the carriers in their shipping rules and rates encouraged the adoption of these techniques by users. Further, for over a decade, there have been available statistical and programming techniques which are useful analytical tools for solving problems of allocation of this type and magnitude. Changes in the requirements for service include "hand-to-mouth" buying and frequent service, dispersion in origins and destinations in and around metropolitan areas, and decentralized production and distribution of goods typically moving as small shipments. Because the services developed without plan, small shipments have become an increasingly complex problem in industrial traffic management.

⁹ Beginning in 1920, railroads (1) inherited excess railroad capacity to provide small-shipment service which has not contracted sufficiently with a shift in demand, notably to highway transport; (2) failed to maintain consistent small-shipment policies; (3) failed to agree upon co-operative action for small shipments, including maximum utilization of the Railway Express Agency; (4) failed to recognize the capabilities of highway and air transport and to incorporate these services into their organizations according to inherent advantages before regulation restricted this practice; (5) failed to develop satisfactory co-ordinated highway services with owner or controlled highway carriers; (6) refused to develop co-operative techniques formally with independent air, highway, and water carriers; (7) continued voluntarily deficit-producing less-than-carload services to retain or secure lucrative carload tonnage and to protect operating rights if, in the future, highway rights should be granted without "key point" or other restrictions; (8) belatedly, and to date restrictively, introduced trailer-on-flat car services. Criticism of railroad initiative, particularly since 1935, must be considered within the framework of federal policy and regulation governing relations between types of transport and rates. The other types of carriers, moreover, have not been zealous advocates of co-operation, particularly those with long-distance operating rights.

¹⁰ Under existing institutional arrangements, initiative and to some extent responsibility for capacity and organization rest with the carriers, but corrective measures undertaken by firms or associations under conditions of imperfect competition are not necessarily in the public interest and must be subject to regulation in the public interest. Under present statutes, government can encourage economy and efficiency in the transport system through regulation. Further, government can and should use its coercive powers in the public interest to require economy and efficiency. *But cf.* the counsel of Commissioner Eastman concerning use of mandatory powers under regulation. *Hearings Before the Subcommittee of the Senate Committee on Interstate Commerce on S. Res. 146, Less-Than-Carload Freight Traffic and Forwarder Carload Traffic*, 76th Cong., 3d Sess. 492 (1940).

¹¹ Statements of congressional policy differ in their insularity, concern for particular types of transport, and emphasis upon competition. In addition, statutory provisions governing operating authority, co-operation among carriers, and unification and control of carriers are incomplete and, in important respects, inflexible and conflicting. Finally, without congressional disapproval, the ICC and the CAB failed to develop, employ, and to require satisfactory techniques for measuring "needs," "adequate service," "distinct service," "inherent advantage," and "competition," which has accentuated the problems arising from omission and conflict in the statutes. C. L. DEARING & WILFRED OWEN, NATIONAL TRANSPORTATION POLICY (1949); *Hearings Before the Subcommittee on Domestic Land and Water Transportation of the Senate Committee on Interstate and Foreign Commerce on S. Res. 50, Study of Domestic Land and Water Transportation*, 81st Cong., 2d Sess. (1950); *Hearings Before the Senate Committee on Interstate and Foreign Commerce on Bills Relative to Domestic Land and Water Transportation*, 82d Cong., 2d Sess. (1952); PRESIDENTIAL ADVISORY COMM. ON TRANSPORT POLICY AND ORGANIZATION, REVISION

The most important and continuing reason for both imbalance in capacity and un-economic organization is that federal transport policy is in conflict with economic principle and the characteristics of the carriers and agencies. In case of railroads, restraints upon pooling, consolidation, and abandonment perpetuate excess capacity and discourage combinations which would result in economies of scale.¹² And with respect to all other types of transport and agencies, restraint upon operating authority and permitting large-scale operation appear to lessen a natural tendency toward competition.¹³

B. Results

Viewing regulation in perspective, there emerge two crucial tendencies which have profound effects upon regulated small-shipment services. First, a single type of transport tends to be employed extensively and intensively by individual carriers, with little regard to the principle of substitution.¹⁴ The techniques adopted by, or forced

OF FEDERAL TRANSPORTATION POLICY, A REPORT TO THE PRESIDENT (1955); *Hearings Before a Subcommittee of the House Committee on Interstate and Foreign Commerce on Transportation Policy*, 84th Cong., 2d Sess. (1956); Antitrust Subcomm. of the House Comm. on the Judiciary, *The Airlines Industry*, H.R. REP. No. 1328, 85th Cong., 2d Sess. (1957).

¹² Railroad service, as a whole, is characterized by economies of scale, if not long-run decreasing cost. THOR HULTGREN, *AMERICAN TRANSPORTATION IN PROSPERITY AND DEPRESSION* (1948). The findings of Hultgren indicate decreasing average variable cost for United States railroads, as a whole, even at peak World War II traffic. *But cf.* Senate Comm. on Interstate and Foreign Commerce, *Rail Freight Service Costs in the Various Rate Territories of the United States*, S. Doc. No. 63, 78th Cong., 1st Sess. 48, 52, 60, 70 (1943). There is no evidence that railroad small-shipment service differs from the generalization. Restraints upon pooling and consolidation are inconsistent with the economic characteristics of railroads, although the resulting rates and services must be regulated. Competition from other types of regulated and unregulated transport has severely reduced, if not eliminated, the need closely to supervise railroad abandonment of small-shipment service. Restraint upon abandonment is imposed increasingly by state rather than federal regulation. Entry of new railroads and extension of service by railway technique should be regulated, but the problem is diminishing in importance.

¹³ The economic characteristics of highway carriers do not appear to support large-scale operation. Roberts, *Some Aspects of Motor Carrier Costs: Firm Size, Efficiency, and Financial Health*, 32 *LAND ECON.* 228 (1956). In case of air transport, the debate over economies of scale is inconclusive. *Cf.* Koontz, *Domestic Airline Self Sufficiency*, 42 *AM. ECON. REV.* 103 (1952); comment by Carter, 43 *id.* at 368; and rejoinder by Koontz, *id.* at 373. Koontz argues that there are economies of scale and for consolidation; while Carter questions some of the reasoning supporting the findings, although not necessarily the recommendations for consolidation. The following are representative of the arguments against control over entry and for competition in case of service by highway and air equipment: *Hearings Before the Senate Select Committee on Small Business on ICC Administration of the Motor Carrier Act*, 84th Cong., 1st Sess. (1955); Antitrust Subcomm. of the House Comm. on the Judiciary, *The Airlines Industry*, H. REP. No. 1328, 85th Cong., 2d Sess. chs. 3, 8 (1957); WALTER ADAMS & J. B. HENDRY, *TRUCKING MERGERS, CONCENTRATION, AND SMALL BUSINESS* (1957); Adams, *The Role of Competition in the Regulated Industries*, 48 *AM. ECON. REV.* 527 (1958); Keyes, *The Protective Functions of Commission Regulation*, *id.* at 544; L. S. KEYES, *FEDERAL CONTROL OVER ENTRY INTO AIR TRANSPORTATION* (1951). Comparable studies of water transport and freight forwarding are not available, but the cost characteristics and theoretical argument seem to be the same.

¹⁴ There are several types of transport which differ with respect to service and cost behavior. Further, small-shipment services usually involve several functions or tasks. If the objective is to minimize the cost of performing a particular service, these types of transport should be employed separately or together, according to the least cost combination. Substitution of one type for another to perform a particular task should occur on the basis of relative marginal cost in the short-run period of supply; and in the long-run, substitution should occur whenever the average cost of one type is less than the marginal cost of another. During the past thirty-five years, some railroad services have been preserved (or required under regulation) and, to a lesser extent, used for small shipments, when highway equipment is more economical

upon, regulated carriers and agencies have not tended to minimize cost, which would result if (1) the several types of transport and agencies were employed according to their inherent economy in performing particular functions or tasks,¹⁵ and (2) less efficient techniques were abandoned or discouraged. Since about 1950, there have been some encouraging developments with respect to the principle of substitution within and among firms.¹⁶ Second, total capacity in particular markets tends to be ill-adapted to changes in demand for service in the long run, although there appear to be differences in degree among the several types of transport.¹⁷

The result of these crucial tendencies is that the cost of performing small-shipment service in most markets is higher than it need be, in part because of uneconomical

and provides a superior service. Similarly, a number of highway services have developed where railroad or container and flat-car service is more economical, although in some cases, the substitute service is somewhat poorer. The same may be said in the case of trailers and vessel or barge service. Local air services have been established between principal points where highway equipment is more economical and service (because of infrequent flights) is about the same. Surface express service has been forced to rely heavily upon railroad service in cases where highway equipment is more economical and expeditious. The Post Office, freight forwarders, and particularly exempt and private consolidators, have been more judicious than the others in choosing among the several types of transport, and increasingly so in recent years; but their choice is dictated by rates rather than the factor cost incurred by direct carriers in performing service.

¹⁵ Because of historical accident, managerial discretion, and more recently public policy, services of regulated direct carriers, particularly interterminal services, are, in large measure, organized by and built around one type of transport. There is considerable controversy and mixed legal opinion about the statutes requiring the "unlike" service to be limited or auxiliary in nature, or whether the requirement is discretionary and a matter of policy with the ICC and the CAB. The controversy is reviewed in *American Trucking Ass'ns v. United States*, 352 U.S. 816 (1956); *American President Lines, Ltd., v. C.A.B.* 799 (1947); *Air Freight Forwarder Case*, 9 C.A.B. 473 (1948); *National Air Freight Forwarding Corp. v. CAB*, 197 F.2d 384 (D.C. Cir. 1952). Under virtually the same statutory provisions, the Commission has authorized many auxiliary, a number of "key point," and a few unrestricted highway operations by railroads, but the Board has virtually precluded direct air service by surface carriers. The Board policy is the same for indirect carriers, except in case of the Railway Express which the Board treats in a special and terminable manner. The auxiliary approach may be the most economical one in some cases and should be required in such cases. The point here is that regulatory policy, if not the statutes, does not require what is economical in each particular case, the "exceptional" circumstances doctrine in *American Trucking Ass'ns v. United States*, *supra*, notwithstanding. Whether the several types of transport should be employed within a single firm or be operated by separate firms, with or without joint service, should be decided on the basis of merit, if economy and efficiency are to be the basis of policy. What has been said generally with respect to economy is also applicable to some individual firms which lawfully own or control several types of transport under limited authority.

¹⁶ These developments include a substantial number of rail-trailer and a lesser number of ship-trailer services, a noticeable expansion of joint rail-motor rates, and a number of air and surface carrier arrangements. At this time, these developments do not appear to augur great change; rather, they appear to be selective and a continuation of the particular firm approach.

¹⁷ During the past thirty-five years, demand for small-shipment service and capacity have both increased and changed in nature. The changes in capacity could have been accomplished through adjustments in the amount and type of capacity by existing firms, changes in the number and type of firms, or a combination of both. On the basis of available information, it is clear that (1) railroad and water capacities for performing small-shipment service have not contracted commensurate with the decline in demand for these services; (2) regulated highway and air carriers have increased less than the growth in demand for these services in some instances and more in others; (3) forwarders and consolidators have increased in number at a faster rate than demand for their services; and (4) there is concentration of capacity of all types of transport in the principal markets.

Sensitivity and precision in adjustment to change appear to be more characteristic of exempt and private than of regulated carriers and agencies. Further, regulated highway and air carriers appear to be more sensitive and to make more precise adjustments than railroads.

use of transport facilities, and in part because of excess capacity.¹⁸ More factors of production than necessary are required to perform a given amount of service and to accommodate an increase in the amount of service. In addition, and perhaps of lesser importance to society, regulated carriers and agencies are at a disadvantage, and exempt and private carriers are encouraged.¹⁹

There is reason to believe that regulatory policy consistent with economic principle would alter the total number, types of carriers and agencies, and the size of firms in given transport markets.²⁰

C. Suggested Policy

To mitigate the results described above, federal regulation of capacity and organization should be either intensified or relaxed.²¹ Intensifying regulation might result in greater stability, but relaxing regulation is preferable as a means of lowering cost and improving the allocation of resources in transport because of the (1) economic characteristics of all but railroad carriers, which would have to be regulated;²² (2) minimal influence of subjective matter in the administrative process of regulation; (3) stimulation given to experimentation and efficiency; and (4) opportunity for the price mechanisms to function in a manner which is more consistent with transport

¹⁸ These diseconomies have significant effects upon the level and structure of small-shipment rates, but the diseconomies are distinct and important in themselves.

¹⁹ Uneconomical organization and imbalance in capacity adversely affect regulated carrier service and rates, and consequently encourage private competition.

²⁰ To maximize use of the given capacity in the short run, firms with excess capacity should reduce rates to marginal cost (if necessary) to retain or to attract traffic. If rate reductions do not result in full utilization of capacity, firms with excess capacity should also reduce output to the point where marginal cost equals demand. Short-run rate adjustments are discussed in the next section. Short-run reductions in carrying and operating unit miles appear to have lagged behind reductions in the volume of traffic in case of rail, water, and express carriers. Short-run increases in traffic experienced by motor and air carriers appear to be accompanied by increases in carrying and operating unit miles, particularly in the case of common carriers providing regular route and scheduled service. The same seems to be true of the parcel post.

In the long run, capacity of individual carriers should be governed by equation of long-run marginal cost and demand. If existing rates are assumed, reduction in capacity by some firms should occur even under conditions of imperfect competition. If existing capacity is assumed, a reduction in rates by some firms should occur in order to attract traffic to support the capacity. Or adjustments may be made in both capacity and rates. In the long run, reduction in small-shipment capacity by railroad, water, and the express carriers has noticeably lagged behind the decline in traffic handled, while regulated highway and air carrier capacity have increased less than proportionate to traffic in some cases and more in others.

²¹ Relaxing regulation here means that control over entry of new carriers and extensions in service by existing carriers would be limited to disapproval based upon fitness, willingness, and ability to serve. Elimination of particular services and abandonment would not be regulated. In case of consolidation, pooling, and joint services, control would be exercised, but limited to disapproval where cost or service is not improved. Application of antitrust legislation to these activities in transport is not recommended here if approval has been obtained from the ICC or the CAB. Intensifying regulation means eliminating exemptions, narrowing the definition of private and contract carriage, and perhaps increasing supervision over operating authority and competition generally.

²² Regulation of railroads should continue, because they do not tend to be competitive in nature; but regulation should be relaxed somewhat to encourage economies of scale, including those which may result from mixing unlike types of transport in the same firm. Regulation of air, highway, and water capacity would be virtually eliminated, and under these circumstances, there is little reason to continue restraint upon combinations of unlike types of transport because of the amount of private transport and the ease of entry by for-hire carriers.

requirements. The last point is highly significant and requires detailed analysis, which follows.

II

DEMAND PRICING

A. Causes

Rates and charges on small shipment evolved over the years from actions by carriers, the Interstate Commerce Commission, the Civil Aeronautics Board, and Congress which affect the level of rates, rate structures, and particular rates to meet competition.²³ The weight of evidence is that rates for small shipments developed on the basis of demand for service.²⁴ Net revenue from demand pricing varies considerably among the several types of carriers.²⁵

Demand pricing in the case of small shipments is attributable more to carrier than to market competition.²⁶ Allocation of common costs presents troublesome

²³ Initiative by Congress and the regulatory agencies has been most apparent with respect to prescribing maximum reasonable rate structures, while the carriers have taken the initiative in respect of the level of rates and particular rates to meet competition. In the latter case, the ICC and the CAB have intervened at times to prescribe minimum rates. More significant are the cases where proposed competitive rates are simply found to be unreasonably low or otherwise unlawful.

²⁴ The level of rates is governed by total cost. Since 1920, increases in operating costs principally have caused a succession of increases in the general level of rates. These increases have been applied to commodities, quantities, and lengths of haul without uniformity or apparent relation to increases in the cost of performing particular services. Small shipments have usually borne the full authorized increases. The ICC has, on dubious economic grounds, authorized petitions to increase motor-carrier rates, using the operating ratio as a guide, without using rate of return; and these petitions significantly have almost invariably followed authorized increases in railroad, water, express, and forwarder rates. Forwarder rates on individual small shipments under regulation have been, with exceptions, tied to the rates charged by direct carriers for the same services without convincing cost evidence.

In establishing the structure of rates (relationship of commodities, quantities, and lengths of haul), emphasis is placed on demand for service, although cost of service is considered. The principal objectives in rate-structure cases under regulation have been equity and the maintenance of market competition. Rates on small shipments are higher than large shipments per hundredweight because of cost and demand. The same holds true as between finished products and raw materials. There is no evidence that either average or out-of-pocket cost has been applied *systematically* in case of prescribed maximum lawful rate structures.

In cases of particular rates designed to meet competition, called permissive rates, carrier competition is clearly the dominant factor, and out-of-pocket cost usually serves as a minimum below which competitive prices may not fall. Exceptions will be noted shortly.

²⁵ Revenue from small-shipment services under existing rates and charges by regulated carriers ranges from out-of-pocket cost deficits to fully-allocated cost and perhaps more. Many railroads and water carriers sustain deficits, especially on individual small shipments. Motor carriers appear to incur out-of-pocket deficits on individual small shipments in the lower weight groups, but with respect to others, revenue approaches fully-allocated cost. Surface express revenues barely meet out-of-pocket cost, and parcel post revenues appear to be less than out-of-pocket cost. Earnings of the remaining carriers and agencies are similarly distributed.

²⁶ Demand pricing in the case of carrier competition arises from (1) differences in demand for service, (2) allocation of common and joint costs, and (3) inadequate capacity in some instances and excess capacity in others. In connection with the third point, see notes 12-13, 17, and 20 *supra*.

Market competition is involved in part in many cases, but the impetus for carriers to make rate and other adjustments is based largely upon competition among carriers and agencies to obtain or retain traffic. Decentralization of economic activity, multiple-plant operation, and inventory practices in industry appear to have stimulated carrier competition in some cases and have been the result of carrier competition in other cases; but pressure to adjust rates has come primarily from competition among

problems in both the short and long run, but imbalance in capacity, a long-run problem, appears to be the principal cause of the tendency toward and instability in demand pricing.²⁷ Rate competition is more pronounced among unlike than like carriers because of differences in service.²⁸ Rate competition and retaliation among unlike types of transport tend to be selective rather than general.²⁹ Conference rate-making has perhaps retarded selective rate competition, to some extent, among unlike types of transport, but federal regulation has been the more important limiting factor.

The writer agrees with others who hold that federal policy in respect of surface carriers, designedly or not, and with notable exceptions, restrains interagency compe-

carriers for the available traffic. For an early expression of this view, see *Hearings Before the Subcommittee of the Senate Committee on Interstate Commerce on S. Res. 146, Less-Than-Carload Freight Traffic and Forwarder Carload Traffic*, 76th Cong., 3d Sess. 107-09, 117, 156, 363, 420 (1940). The importance of transport rates and services to the location and size of firms typically shipping or receiving individual and concentrated lots of small shipments, see notes 1 and 2 *supra*, is beyond the scope of this paper, but tentative findings by the writer suggest that nontransport factors are the most important.

²⁷ Inadequate capacity is attributable primarily to government restrictions upon operating authority, which in this case applies to highway and air transportation. See note 13 *supra*.

The reasons for excess capacity are (1) the inherent tendency for decreasing cost in the case of railroads, whose demand-oriented rates have served as the point of departure in rate competition among the several types of transport, see note 12 *supra*; and (2) oversupply of nonrailroad carriers and facilities in particular transport markets, which is in part attributable to duplication of these types of transport and services, but which in large measure results from failure to adjust the capacity and services of railroads as new types appeared (highway and to a lesser extent air carriers) or expanded (parcel post and, to a lesser extent, freight forwarders). See notes 11 and 17 *supra*.

²⁸ In case of rail, highway, water, and surface forwarders, prices are usually determined in conferences and published as agency tariffs under regulation. Interstate Commerce Act § 5a, 62 Stat. 472 (1948), 49 U.S.C. § 5b (1952). Railroad classifications, rules, privileges, and rates developed on the basis of demand for service. The influence of demand has been modified, but not eliminated, over the years through regulation of lawful maximum classifications and rates prescribed to achieve more uniformity and reduce unlawful discrimination. Motor carriers, water carriers, and surface forwarders became parties to railroad classifications or to agency classifications in large measure patterned after those of railroads; but by high minimum ratings and other devices, they lawfully limited themselves to certain classes of traffic. Federal regulation has modified, but not eliminated, the tendency to play "follow-the-leader." This tendency is less pronounced in the case of rate tariffs. Depending upon service advantages, water rates have been the same as, or differentially under, railroad rates, and motor-carrier rates have hovered about railroad rates. Forwarders tend to follow the small-shipment rates of the direct carriers employed.

Conference rate-making and agency tariffs are less significant in case of air freight, but air-freight charges have been in substantial degree patterned differentially under air express charges, although the practice is disappearing.

Payments made to direct carriers by the Post Office and surface and air express are not based upon tariffs, but are negotiated and regulated. Adjustments in parcel post package weights, sizes, rules, and rates are related to, if not based upon, express practices. Some motor-freight and bus package rates appear to be related to parcel post and express charges.

²⁹ Selective matching of prices occurs when carriers, in order to gain or retain traffic from other carriers, establish classifications, rules, privileges, or rates which are limited in application with respect to commodities, quantities, and lengths of haul. These rates, sometimes called permissive rates, are less than the prescribed lawful maximum rates and are often published on an individual carrier rather than on a conference basis. There is some tendency in selective rate-making for carriers to choose those commodities and points for which they have natural cost advantages, but the decisive factor in selection is the spread between the rate charged by the competitor and the out-of-pocket cost or average cost of the proponent. When alternative services are close substitutes, rates tend to be the same; but when they are not, there tend to be differences in rates which are supposed to reflect differences in service. Although selective matching often involves a reduction in charges, the practice is also applied when the level of rates is increased. See note 24 *supra*.

tion and tends to maintain the status quo and the existing distribution of traffic.³⁰ Rates which are compensatory in an absolute sense and not preferential or prejudicial to users are often found to be unreasonable and unlawful because of their effect on carrier competition.³¹ The proposed rates may narrow a rate differential, equal rates of competitors, or undercut rates of competitors. In making its findings, the Commission concedes benefits to shippers, but the "threat of retaliation," "needless loss of revenue," "destruction of the rate structure," "abandonment of traditional principles of ratemaking," "national defense requirements for all types of transport," "desirability of developing and preserving all modes," "desirability of sharing the traffic," and "destructive competition" are found individually and severally to be controlling.³² These findings have been made in some cases, even though the proposed rates met fully-allocated cost.³³

This policy is consistent with other federal policies pertaining to the structure and perhaps the level of rates.³⁴ More important is the fact that under regulation,

³⁰ The guides for ICC rate policy are the statutory statement of policy and the statutory rule of rate-making, the latter permitting, if not requiring, demand pricing. 72 Stat. 572, 49 U.S.C.A. § 15a (Supp. 1958). Restraining competition and maintaining the distribution of traffic as matters of policy have been denied by the Commission.

The subject of interagency competitive rates and Commission policy has been the source of spirited debate in public forums and trade journals, given special study by the PRESIDENTIAL ADVISORY COMM., *op. cit. supra* note 11, and exposed to searching review by Congress. *Hearings Before a Subcommittee of the House Committee on Interstate and Foreign Commerce on Transportation Policy*, 84th Cong., 2d Sess. (1956). The last source contains a wealth of factual material, discussion of Commission and court rulings, and a number of proposed changes in the rule of rate-making. See also, U.S. BUREAU OF TRANSPORT ECONOMICS AND STATISTICS, ICC, HISTORICAL DEVELOPMENT OF TRANSPORT COORDINATION AND INTEGRATION IN THE UNITED STATES, STATEMENT 5015 (1950); *id.*, RAIL-WATER RATE ADJUSTMENTS, STATEMENT 5427 (1954); *id.*, INTERAGENCY RATE ADJUSTMENTS—RAIL AND MOTOR—STATEMENT 567 (1956).

After long hearings and debate, Congress amended the rule of rate-making in 1958 affecting surface carriers, ostensibly to prevent the Commission from holding up the rates of one type of transport to protect another, "giving due consideration to the objectives of the national transportation policy declared in this Act" (not defined). 72 Stat. 572, 49 U.S.C.A. § 15a (Supp. 1958). The results of this change on Commission policy are not yet apparent, but it is significant to note that the modifying clause has been used before by the Commission to explain its actions, and opponents of statutory change did not strenuously oppose the amendment in its final form!

³¹ Proposed interagency competitive rates must not unjustly prefer or prejudice shippers, places, or classes of traffic and must be compensatory—that is, something more than out-of-pocket cost. The ICC has never clearly indicated whether short- or long-run out-of-pocket cost is intended as the guide, nor how much more than out-of-pocket cost a rate should be.

³² These terms are never defined, lack objective qualities, and are not justiciable. Similar reasoning has been followed when rates have been approved as not violating these standards!

³³ The ICC rejects the argument that cost is controlling, relying upon a never precisely interpreted statutory statement of policy. In exceptional cases, cost superiority has been found to be controlling, even though competitors were threatened with a complete loss of traffic. Langdon, *The Regulation of Competitive Business Forces: The Obstacle Race in Transportation*, 41 CORNELL L. Q. 57 (1955).

³⁴ The number of minimum rates prescribed is admittedly small, but the principles established in these cases have influenced carrier proposals far more than the number of minimum rates would suggest. Further, proposed competitive rates are frequently denied for being unreasonably low, without minimum rates being prescribed.

Relationships among commodities, quantities, and lengths of haul established in prescribed reasonable maximum rate structures have the cloak of legitimacy, despite elements of demand pricing. Competitive rate-making under regulation tends to destroy the prescribed maximum relationships.

Authorized increases in the level of rates to meet carrier need for revenue and reductions in some rates to meet carrier competition are not unusual simultaneous events under regulation. Unless demand for service is highly elastic, competitive rate-making has an adverse effect upon the actual level of rates.

interagency surface competitive rates will only by chance reflect relative cost of service.

The Board appears less inclined to maintain the status quo in case of competition among air carriers, both direct and indirect,³⁵ and not at all in case of competition between air and surface carriers.

B. Results

The results of demand pricing involve both economic and equity issues. Attention here will be limited to the economic issues. Except as there is an infinitely inelastic demand for service, which does not appear to characterize the demand for small-shipment services, demand pricing (departure from rates equal to marginal cost) results in misallocation of resources.³⁶ There are also derivative effects, which in case of transport include misallocating transport tasks based upon inherent advantages;³⁷ perpetuating excess capacity and uneconomic organization in case of regulated carriers;³⁸ and finally, encouraging exempt and private carriers in transport markets which are adequately supplied in varying degrees.³⁹

³⁵ Air Freight Rate Investigation, 9 C.A.B. 340 (1948), 11 C.A.B. 228 (1950); Air Freight Tariff Agreement Case, 14 C.A.B. 424 (1951); Air Freight Rate Case, 18 C.A.B. 22 (1953).

³⁶ Rates above marginal cost cause a reduction in transportation service purchased for which there is effective demand, and rates below marginal cost cause an expansion in purchases of transport service beyond the added cost of furnishing it. The latter alone will cause either an increase in rates for other services to pay for deficits which result from the difference between rates and marginal cost, or a lower return to the carrier. Reduction and expansion in purchases of transport will tend to cause reduction and expansion in output and purchases of other factors of production, although the relationship of transport rates to the preceding is not direct nor in all cases crucial.

With respect to transport, rates above marginal cost result in a reduction in output and factors devoted to transport, while rates below marginal cost have the opposite effect.

In the case of railroads, which are characterized by decreasing cost, the amount of transportation purchased is larger with price discrimination than with a single price based on average cost. But the amount of service purchased will be less with price discrimination than with marginal cost pricing.

³⁷ As used here, inherent advantage refers to the ability of a particular type of transport, several types mingled in the same firm, or several types acting co-operatively, to produce a given service at a lower marginal cost than that of competitors. Because there are usually differences in marginal cost among competing carriers and rates are not systematically related to marginal cost, there is little reason to believe that demand pricing will result in an allocation of tasks based upon inherent advantage.

³⁸ Each type of transport, carrier, service, and technique tends to be perpetuated in a transport market as long as revenue is equal to or greater than out-of-pocket cost. Because small-shipment rates are based upon demand for service, competition is imperfect, and regulatory policy encourages maintenance of the status quo, the price mechanism does not eliminate excess capacity in, or force a more economical organization of, small-shipment services.

³⁹ Intercity private transportation, direct and indirect, is conducted primarily by large firms between principal points, and it arises because of the spread between for-hire rates and the cost of providing a given service by private means. Although regulated for-hire traffic, service, and competition are greatest in large transport markets, private carriers also operate primarily in these markets, because (1) private operations, like those of for-hire carriers, are usually most costly when they involve small lots distributed among a number of scattered places, and for-hire carriers usually have better utilization of equipment among small places; (2) regulation tends to maintain parity in rates between small and large places; (3) demand for transportation is probably higher and more inelastic between larger than smaller points, and hence demand pricing by for-hire carriers is encouraged; and (4) restrictions upon rates and upon operating authority in the case of regulated highway and air transport and freight forwarders tend to perpetuate the conditions for demand pricing by these carriers.

Whatever the motive for restraining competition among regulated carriers—protection of existing regulated carriers of all types or stability in rates and service for shippers—regulatory restraint upon all but rail transport will fail as long as private transport is not controlled arbitrarily. The reason for this assertion is the ease of entering.

Demand pricing always results in misallocation of resources and transport tasks, but the incidence and effect of demand charges are not the same when based upon market as opposed to carrier competition.⁴⁰ And in case of carrier competition, which is becoming increasingly a dominant force, there are differences in incidence and effects resulting from restrained rate competition under regulation and less restrained rate competition.⁴¹ Less restrained rate competition would directly benefit small-shipment services, particularly the movement of concentrated lots.⁴²

C. Suggested Policy

Regulatory rate policy is currently the subject of great controversy, particularly with respect to its effect upon carrier competition. Most assailants of government policy do not propose to abandon demand charging. In case of railroads, demand pricing is the only alternative if public policy is to maximize output and minimize cost of service without subsidy or government operation.⁴³ A defensible public policy of regulated demand pricing for railroads under conditions of long-run decreasing cost, however, is not defensible for other types of carriers and agencies characterized by constant or increasing cost. And the practice of using railroad rates, in large measure, as the point of departure for demand pricing by other types of transport is even more questionable as a price policy.

⁴⁰ Reasonable maximum rate structures prescribed for railroads and the express, and adopted wholly or partially by other carriers, incorporated demand pricing based largely on market competition; charges per unit of weight were relatively high for finished products and short hauls, and if adhered to, they would result in a particular allocation of resources and transport tasks. Demand charging based primarily upon carrier competition produces different results. What a market can pay and what it has to pay under carrier competition are not necessarily the same. Relationships among large and small markets, large and small users, substitute commodities, techniques of production and marketing, and raw materials and intermediate or finished products are involved.

⁴¹ Rate competition is restrained under regulation, which tends to maintain the status quo. Less restrained rate competition would alter the status quo and, therefore, in some degree, the allocation of resources and transport tasks. Less restrained rate competition among types of transport has been ardently supported by railroads and proposed as a matter of law. PRESIDENTIAL ADVISORY COMM., *op. cit. supra* note 11; *Hearings, supra* note 30. See also Nelson, *Revision of National Transport Regulatory Policy*, 45 AM. ECON. REV. 910 (1955). Equally ardent opposition is expressed by highway and water carriers, which benefit under present policy. Among shippers, the proposal has received both support and opposition.

⁴² The bulk of small-shipment traffic consists of manufactured goods, and carrier competition is most intense for this class of traffic. Concentrated lots of manufactured goods now pay relatively high rates compared to out-of-pocket cost and invite rate competition. Railroads particularly desire to adjust charges on concentrated lots. Charges on individual small shipments vary in relation to out-of-pocket cost, but lower rates on concentrated lots will tend to force reductions in rates on individual small shipments in cases where there is a large spread between rates and out-of-pocket cost. Motor carrier traffic will be adversely affected by these reductions on all but very small packages and short hauls. Regulated, exempt, and private forwarders will benefit if the spread in rates between individual small shipments and concentrated lots increases.

⁴³ There is some support in case of decreasing cost for marginal (out-of-pocket) cost pricing of individual services and payment of the deficit by government through subsidy or direct operation. Hotelling, *The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates*, 6 ECONOMETRICA 242 (1938). Conceding that marginal cost pricing results in the greatest output and the best allocation of resources in transport, subsidy from taxation is objectionable, because there is no necessary relationship between transport benefits and taxes. Limited demand pricing is accepted generally, and is condoned here as a lesser evil to prevent subsidy and to preserve private ownership and operation in case of industries of decreasing cost.

An alternative to present rate policy under regulation is to establish rates in proportion to differences in the level of marginal costs.⁴⁴ Preservation of differences in marginal cost in competitive rate-making would result in a better allocation of resources than present rate policy. This alternative, however, would not tend to eliminate excess capacity, minimize factors devoted to transport, nor result in rates closely related to the cost of performing particular services.

A more radical alternative, supported here, is to permit less restrained rate competition. Regulatory agencies would establish reasonable maximum and minimum rates, carrier competition would determine the actual rate, and carriers would be accountable for personal discrimination and unjust preference and advantage. Proponents argue that less restrained rate competition will be more likely to result in rates based upon relative cost of service.⁴⁵ The reasons for this position are that (1) competitive rate-making will result in some redistribution of traffic; (2) rates on noncompetitive traffic need not increase; (3) reductions in competitive rates need not cause reductions in net revenue; (4) redistribution of traffic need not result in rate increases by losing carriers; and (5) reduction in competition need not result in rate increases.

1. *Competitive rate-making will result in some redistribution of traffic*

Competitive rate-making will, to some extent, redistribute existing traffic and alter the rate of growth among the several types of transport, because there is some substitutability among carriers and agencies. Redistribution of traffic alone is not against the public interest.

2. *Rates on noncompetitive traffic need not increase*

Rates on noncompetitive traffic in many cases already approach prescribed reasonable maximum rates, if not what the traffic will bear.⁴⁶ Further, the Commission and the Board would still be empowered to protect users upon a finding that the differences between competitive and noncompetitive rates were unreasonable and unjust.

⁴⁴ Extended discussion of this idea with Dr. J. R. Rose has been most helpful.

⁴⁵ See note 41 *supra*. Present regulatory policy tends to maintain the status quo, a policy which only by chance will result in rates related to relative cost of service, particularly in the case of small-shipment services. More rate competition will encourage each of the several types of transport, if not individual carriers, to seek existing traffic and to develop new traffic for which they are inherently suited. In this connection, see also Pegrum, *The Special Problem of Inter-Agency Competition in Transport*, 24 ICC PRAC. J. 307 (1956); H. Koontz, *Transportation Freedom for National Defense*, a reprint of an address before the Eleventh Convention of National Transportation Association, Salt Lake City, Utah, Oct. 15, 1956.

⁴⁶ The concept of a reasonable rate should be given greater precision whether competitive pricing is allowed or not. No rate should be greater than average nor less than marginal (out-of-pocket) cost. Fully-allocated cost, exclusive of common costs and deficits attending other services (e.g., passenger service) has been suggested as the lower limit for a prescribed maximum rate. Cf. PRESIDENTIAL ADVISORY COMM., *op. cit. supra* note 11, at 11. If this latter suggestion is followed in practice, and fully-allocated cost less deficits is well above many currently prescribed maximum rates, rates on noncompetitive traffic could be increased, market competition permitting, and rates on competitive traffic reduced. In a limited sense, the issue is simply, whose ox is gored? The economic effects of increasing rates on raw materials traffic, however, would probably not be offset by the effects of reducing rates on finished products, because transport rates tend to be pyramided and become cumulative in the production and marketing processes.

In addition, the type and amount of traffic not subject to carrier or market competition is relatively small, raw materials included, and growing private carrier and market competition act as further deterrents to rate increases. Finally, if there are increasing returns from rate reductions on competitive traffic, there will be less need to increase rates on noncompetitive traffic.

3. *Reductions in competitive rates need not cause reductions in net revenue*

The effect on net revenue from reductions in competitive rates hinges upon elasticity of demand for service. There is little evidence to indicate that demand for transport service is relatively inelastic; and if, as volume increases, the reduction in rates is less than proportionate to the reduction in average unit and marginal cost, increasing returns will occur. Net revenue for the carrier(s) reducing rates will increase, not decrease. In addition, with a larger volume of traffic, quality of service may improve and thereby stimulate demand for service, for techniques of operation differ as between small and large volumes of traffic. Further, added traffic may, in some cases, also result in economies of scale.⁴⁷

4. *Redistribution of traffic need not result in rate increases by losing carriers*

Gains accruing to certain carriers and users from reduced rates may be partially offset by losses suffered by other carriers and users through net reductions in traffic and consequent increases in cost and rates. The possibility is remote and, therefore, relatively unimportant for two reasons. First, with respect to users, carriers losing traffic will be deterred from increasing rates on remaining traffic, because the volume of captive traffic is not large, and in most cases, regulated carrier services may be substituted one for another at some price above the out-of-pocket cost of the low cost carrier. Private carrier and market competition are also deterring factors.

Second, carriers characterized by constant or increasing cost will be reduced in number as traffic declines, but average and marginal cost will not increase.⁴⁸ Rates, therefore, need not be increased. Only in the case of railroads will net losses in traffic result in higher long-run average and marginal cost, and there is nothing to indicate that railroads will sustain net losses in traffic under less restrained rate competition.⁴⁹

⁴⁷ Observations made in this paragraph are particularly relevant to railroads, which are at present outspoken proponents of competitive pricing. Railroads are clearly underutilized, and it is doubtful if many of them have achieved the most economical size. Many of their proposed competitive rates are designed to regain traffic lost to competitors. It is also significant to note that railroads urge, correctly in principle, that compensatory user charges be levied on publicly-owned air, highway, and water facilities. These charges would tend to reduce private competition and force for-hire carriers to charge rates which reflect total cost to society of producing service, again increasing potential traffic for railroads. Railroads also urge freedom to operate other types of transport without restraint in order to use the most economical machinery for each task. As stated repeatedly in this article, the basis for decision in these matters should be economy and efficiency, not aid to railroads or preservation of the status quo.

⁴⁸ See notes 12, 13, 17, and 20 *supra*.

⁴⁹ Railroad pressure for more freedom to conduct highway operations, tightening of the definition of for-hire carriers, and user charges should be kept in mind.

5. *Reduction in competition need not result in rate increases*

Carrier competition eventually may be reduced, or in some cases eliminated, and there is understandable fear by users of future increases in rates or deterioration in service with the same rates. Balanced against this possibility are (a) regulatory powers to control maximum reasonable rates; (b) the constant threat of market competition and the reappearance of for-hire and private carrier competition, particularly highway transport;⁵⁰ and (c) changes in the attitude of for-hire management toward its responsibilities under a new institutional arrangement. Emotions and experience differ, but the third point gives least promise. Regulatory agencies can prevent unreasonable rate increases and will protect the public if the public demands effective regulation.

⁵⁰ It is conceded that there may be a range within which rates might move without competition, for the threat of rate reductions to drive out competition will increase the risk for competitors and thus their costs and rates. The risk would not make competition prohibitive, except in the case of new railroads.