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THE ECONOMIC EFFECTS OF REGULATION: THE CASE OF
MOTOR CARRIERS OF HOUSEHOLD GOODS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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* * * * *

The Ohio State University
1975

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Sincere thanks also go to my wife who did much typing at less than market wages.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>VITA</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>viii</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Definition of the Industry</td>
<td>1</td>
</tr>
<tr>
<td>An Industry Study</td>
<td>2</td>
</tr>
<tr>
<td>A Case Study in the Economic Effects of Regulation</td>
<td>3</td>
</tr>
<tr>
<td>Preview of Chapters</td>
<td>10</td>
</tr>
<tr>
<td>II. MOTOR CARRIERS OF HOUSEHOLD GOODS: BASIC CHARACTERISTICS OF THE INDUSTRY</td>
<td>12</td>
</tr>
<tr>
<td>Introduction</td>
<td>12</td>
</tr>
<tr>
<td>Basic Characteristics of the Industry</td>
<td>13</td>
</tr>
<tr>
<td>The Regulatory Framework</td>
<td>42</td>
</tr>
<tr>
<td>Summary</td>
<td>65</td>
</tr>
<tr>
<td>III. MARKET STRUCTURE AND CONDUCT</td>
<td>69</td>
</tr>
<tr>
<td>Introduction</td>
<td>69</td>
</tr>
<tr>
<td>Market Structure</td>
<td>70</td>
</tr>
<tr>
<td>Market Conduct</td>
<td>105</td>
</tr>
<tr>
<td>Summary and Conclusion</td>
<td>145</td>
</tr>
<tr>
<td>Chapter</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>IV. THE EFFECT OF REGULATION ON RATE LEVELS</td>
<td>152</td>
</tr>
<tr>
<td>Introduction</td>
<td>152</td>
</tr>
<tr>
<td>Maryland as an Unregulated Competitive Sector</td>
<td>154</td>
</tr>
<tr>
<td>The Maryland Rate Survey</td>
<td>158</td>
</tr>
<tr>
<td>The Rate Comparison</td>
<td>163</td>
</tr>
<tr>
<td>Demand Fluctuations and Rate Flexibility</td>
<td>167</td>
</tr>
<tr>
<td>Conclusion</td>
<td>173</td>
</tr>
<tr>
<td>V. THE SALE VALUE OF HOUSEHOLD GOODS CARRIER OPERATING CERTIFICATES</td>
<td>175</td>
</tr>
<tr>
<td>Introduction</td>
<td>175</td>
</tr>
<tr>
<td>The Creation and Disposition of Monopoly Gains</td>
<td>178</td>
</tr>
<tr>
<td>The Estimation of Monopoly Gains</td>
<td>181</td>
</tr>
<tr>
<td>The Sale Value of Nationwide Non-Radial Certificates</td>
<td>196</td>
</tr>
<tr>
<td>Conclusion</td>
<td>210</td>
</tr>
<tr>
<td>APPENDIX</td>
<td></td>
</tr>
<tr>
<td>Interstate Transportation Charges for a 7000 Pound-125 Mile Shipment: September 1973 and March 1974</td>
<td>213</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>216</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table | Page
--- | ---
1. Shipment Characteristics: Weight and Length of Haul | 22
2. Industry Revenue for Selected Years (1949-1971) | 26
3. Carrier Size and the Importance of Subcontracting | 36
4. Number of Household Goods Carriers | 71
5. Number and Size Distribution of Household Goods Carriers (1964) | 72
6. Industry Concentration Ratios for Selected Years | 74
7. Geographic Distribution of Regional Carriers (1971) | 76
8. Agency Status of Household Goods Carriers Holding Operating Certificates for Various Local Markets | 78
10. Separate Expense Categories as a Percent of Total Operating Expenses: Class I and II Motor Carriers | 100
11. Rates per Hundredweight on Household Goods Shipments Weighing 4000 to 8000 Pounds (1951) | 124
12. Percentage Reduction of Total Military Transportation Rates from Total Regular Transportation Rates | 126
<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Reduced Military Rates and the Profit Margins on Selected Shipments</td>
<td>130</td>
</tr>
<tr>
<td>16. Maryland Rate Quotations for 7000 Pounds Moving 125 Miles</td>
<td>160</td>
</tr>
<tr>
<td>17. Average Rate Quotation by Type of Maryland Carrier</td>
<td>161</td>
</tr>
<tr>
<td>18. Comparison of Unregulated and Regulated Rates for a 7000 Pound-125 Mile Shipment</td>
<td>165</td>
</tr>
<tr>
<td>21. Scope of Authority Purchased by Selected Nationwide Carriers</td>
<td>201</td>
</tr>
<tr>
<td>22. Scope of Authority for Western States Purchased by Selected Nationwide Carriers</td>
<td>202</td>
</tr>
<tr>
<td>23. Estimated Sale Value of Forty-Eight State Operating Authority for Selected Nationwide Carriers</td>
<td>205</td>
</tr>
<tr>
<td>24. Interstate Transportation Charge for a 7000 Pound-125 Mile Shipment: September 1973</td>
<td>214</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure Page

1. Sources of Economies of Scale ............ 29
CHAPTER I

INTRODUCTION

I. Definition of the Industry

Motor carriers of household goods (abbreviated here and elsewhere as HHG) are trucking firms which specialize in transporting the furniture and other personal belongings of families involved in residential relocation. The basic service performed by HHG carriers includes the loading of HHG into the van at the point of origin, the line haul movement, and unloading at the point of destination. Additional services offered include the provision of cartons and containers, packing and unpacking, insurance for the consumer against loss and damage, and temporary or long term storage of HHG.

This study focuses on those HHG carriers who transport shipments in interstate commerce and thereby come under the jurisdiction of the Interstate Commerce Commission. In 1971 there were an estimated 2400 interstate HHG carriers regulated by the ICC. Their total operating revenues of $910 million were
derived from three consumer groups: individuals paying for their own moves (private accounts), military personnel (military accounts), and company employees (national accounts). The largest HHG carrier in 1971 was Allied Van Lines with operating revenues of $113 million. This compares with the $306 million in revenue earned in 1971 by Consolidated Freightways Corporation of Delaware, the largest motor carrier of general freight. Overall, data from 1965 indicates that the revenues of interstate HHG carriers represent approximately 11% of the total revenue earned by the ICC regulated general freight carriers.

II. An Industry Study

This dissertation consists of both an industry study and a case study in the economic effects of regulation. As an industry study, HHG carriers are analyzed in terms of the basic characteristics of the

1"When Moving Men Show Their Worst Side," Business Week, August 21, 1971, p. 86.


industry (including the regulatory framework), market structure, and market conduct.

A comprehensive study of HHG carriers does not presently exist despite their unique nature among motor carriers regulated by the ICC. The mode of operation of HHG carriers is clearly distinguishable in that much of the actual transportation of HHG is subcontracted to outside trucking firms and to independent owner-operators. In addition, the moving vans tend to perform a "roving service" throughout a territory as opposed to traveling over regular routes or following fixed time schedules. HHG carriers are unique in their reliance upon agencies established in local communities which solicit shipments and perform other services for the principal carrier. With roving vehicles and agency networks, centralized communication and dispatching become more important functions in the case of HHG carriers.

III. A Case Study in the Economic Effects of Regulation

The Rationale for Regulation

The regulations administered by the ICC have a direct effect on market structure and market conduct and thus are a determinant of industry performance. As a result, the HHG carrier industry serves as a case study in the economic effects of regulation.
There are many hypotheses purporting to explain the rationale for industry regulation. A range of competing hypotheses is provided by the following:

1. consumer protection hypothesis
2. no-effect hypothesis
3. producer protection hypothesis

In addition, there are supplementary behavioral hypotheses including:

4. subversion hypothesis
5. taxation by regulation hypothesis
6. the hypothesis of "minimal squawk" behavior

In contrast to the abundance of hypotheses concerning economic regulation, few empirical studies have been

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undertaken to actually measure the economic effects of regulation. The result has been an inability to identify and discard less useful hypotheses. The most comprehensive studies have been those undertaken by Stigler and Friedland,9 Jordan,10 and MacAvoy.11 In the area of motor carrier regulation, more limited studies have been undertaken examining specific aspects of economic regulation.12

Under the consumer protection hypothesis, economic regulation is viewed as serving to protect the public from monopolistic exploitation. This has been the rationale traditionally offered for industry

9Stigler and Friedland, op. cit.
10Jordan, op. cit.
regulation but it is most applicable for those industries in which protracted increasing returns to scale would tend toward technical monopolies. In such cases consumer interests are presumably best served by reducing prices to marginal costs, eliminating discriminatory price structures, assuring adequate service, and allowing only normal returns to investors.

The regulation of HHG carriers however would be difficult to rationalize in terms of consumer protection. Despite an absence of economies of scale in trucking per se, the industry is thoroughly regulated. The ICC has been given the power to restrict entry, impose minimum rates, grant antitrust immunity for industry price fixing, and suppress certain forms of non-price competition. This study will demonstrate that the producer protection hypothesis is useful in explaining the regulation of HHG carriers.

In direct contrast to the traditional consumer protection rationale for regulation, the producer protection hypothesis views regulation as serving to generate monopoly gains for an industry. This could occur if regulation converted a competitive or an oligopolistic industry into a cartel. A cartel is a group of independent firms which collaborate for the purpose of suppressing or limiting competition. As Jordan argues, the economic effects of such regulation would tend to be
higher prices, a discriminatory price structure, restricted entry, and greater industry profits.\(^{13}\)

Jordan emphasizes that different industries will meet with varying degrees of success in achieving these goals depending upon "the 'natural' market structure of each industry, the powers given to the regulatory commission, and its implementation of those powers."\(^{14}\) As an example, the inability of a regulatory commission to set minimum rates in an industry with hundreds of firms would make the cartel goals of higher prices and profits difficult (if not impossible) to achieve.

George Stigler, in presenting his theory of protective regulation, gives additional reasons why regulation is not perfect in terms of producer protection. He argues "that, as a rule, regulation is acquired by (an) industry and is designed and operated primarily for its benefit."\(^{15}\) The favors which an industry would generally seek from government include (1) control over entry by new rivals, (2) the

\(^{13}\)Jordan, op. cit., p. 8.

\(^{14}\)Ibid., p. 5.

suppression of substitutes and promotion of complements, and (3) price-fixing administered by a body with coercive powers.\textsuperscript{16} Stigler goes on to argue though that the regulatory process itself imposes certain limitations on an industry's effort to cartelize itself. The costs of complying with the regulations for example may be significant and, if so, have an adverse impact on industry profit. In addition, the regulatory process grants access to well organized outside interests who can affect behavior in the industry. Stigler gives the example of the difficulty railroads had in abandoning unprofitable passenger business.

Imperfections do exist in the protective regulations affecting HHG carriers and there are certain limitations imposed by the regulatory process itself on the exercise of cartel policies by the industry. These imperfections are identified and an attempt is made to determine their significance.

The Economic Effects of Regulation

The producer protection hypothesis holds that if an otherwise competitive industry becomes cartelized through protective regulation, one should observe rates being raised above competitive levels i.e. above

\textsuperscript{16}Ibid., pp. 4-6.
marginal costs. This hypothesis is tested in the case of HHG carriers by comparing the rates of ICC regulated HHG carriers with those of unregulated HHG carriers where the "natural" market structure of each of the two sectors is assumed to be competitive.

Geographically, the largest remaining unregulated sector is that represented by intrastate HHG shipments in the state of Maryland. Rates were obtained directly from a number of Maryland carriers and were then compared to the rates charged by ICC regulated interstate carriers for comparable shipments. It was found that regulated interstate rates are substantially higher than the regulated Maryland rates which is consistent with the test hypothesis.

A protective regulatory framework within which higher than competitive rates have been established would be expected to generate monopoly gains for HHG carriers unless rising costs under regulation have offset increased revenues. In the present study an attempt is made to quantify the monopoly gains which are expected to have been generated by protective regulation. It is argued that monopoly gains tend to be capitalized into the sale value of HHG carrier operating certificates. Operating certificates are licenses issued by the ICC authorizing the transportation of HHG within specified geographic areas. Since the certificates are transferable, a
sample of sale prices could be obtained from files at the ICC. A model was then developed to estimate the sale value of individual radial certificates which are the most numerous certificates although they tend to be of rather limited geographic scope.

A significant portion of total monopoly gains however is represented by the sale value of the small number of nationwide operating certificates. No nationwide authority has ever been sold as a single certificate so the sale value of a nationwide certificate is indirectly estimated by summing the prices paid by representative carriers for separate certificates which when combined constitute nationwide authority for each of these carriers. This necessitated tracing the history of certificate acquisitions for a sample of representative carriers and then using ICC dockets to locate the prices paid.

Using the sale value of operating certificates, estimates of the total monopoly gains are derived for the nationwide carriers and the other carriers in the industry.

IV. Preview of Chapters

The basic demand and supply characteristics of the HHG carrier industry are presented in Chapter II. In addition, Chapter II examines the nature of the regulatory framework within which HHG carriers operate
and this is done from the point of view of producer protection. Chapter III analyzes the market structure and conduct of HHG carriers as determined by the basic characteristics of the industry including ICC administration of economic regulations. In Chapter IV, the impact of regulation on rates is determined by comparing the rates of ICC regulated HHG carriers with the unregulated rates of intrastate Maryland HHG carriers. The effect of ICC regulation is estimated to have significantly increased the rates for interstate HHG shipments. Finally, in Chapter V, estimates are made of the magnitude of monopoly gains generated by protective regulation.
CHAPTER II

MOTOR CARRIERS OF HOUSEHOLD GOODS: BASIC
CHARACTERISTICS OF THE INDUSTRY

I. Introduction

This chapter contains four sections setting forth the basic characteristics of the household goods carrier industry. Section II of the chapter begins by presenting a brief history of the industry. This is followed by an analysis of the HHG carriers' empty back haul problem which arises from the nature of demand and the joint product nature of supply in the industry. Early attempts to overcome the problem are described in Section II. Other characteristics of demand such as seasonality, geographic distribution, growth and elasticity are also examined in Section II. Finally, Section II attempts to determine the extent to which economies of scale in HHG carrier operations are expected and are apparent.

Another basic characteristic, the regulatory framework within which HHG carriers operate, is presented in Section III. The legislative history of relevant regulations is presented and shows the demand for regulation to have originated primarily among producer interests; not
consumer interests. The last part of Section III examines the extent to which the regulations actually adopted could serve to protect HHG carriers from competition.

II. Basic Characteristics of the Industry

Early History

The first official long distance shipment of HHG was made in 1920 by American Red Ball Transit. The trip was from Indianapolis to New York City and took two weeks partly because only 56 miles of the 729 mile route were paved at the time. Prior to this event, intercity transportation of HHG was handled exclusively by railroads. HHG would be picked up and taken to a railroad depot for shipment to destination at which time another firm would deliver the HHG from the depot to the new residence.

The intercity transportation of HHG by motor carrier developed slowly during the 1920's. The industry had to await the paving of rural highways and the introduction of more powerful trucks, both of which served to reduce costs. The most serious

problem faced by long distance movers at the time, however, was the empty back haul.

**Nature of Demand, Joint Products, and the Back Haul Problem**

The mode of operation of HHG carriers is quite distinct from other motor carriers. The distinction is due primarily to the difference in the nature of demand facing the various types of motor carriers. On the one hand, HHG carriers serve individual customers who are scattered over a wide geographic area with each shipment potentially representing a different pair of origin-destination points. In addition, HHG shippers' demands are typically non-repetitive. By contrast, the repeat transportation demands of commercial shippers who transfer goods from given points of origin to regular customers at given destinations often allow motor carriers of general freight to operate at scheduled intervals over the same routes between fixed terminal points.

The transportation of HHG clearly illustrates the back haul problem faced by most transportation firms. The demand for transportation service is generally of a one way nature but a transportation firm

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in producing front hauls outbound from a home base necessarily produces back hauls i.e. the unit of output (the round trip) is greater than the unit of sale. Front hauls and back hauls then are joint products produced in fixed proportions.

The peculiar nature of demand facing HHG carriers has made the back haul problem particularly costly to them since they often must return empty. A HHG carrier may haul five shipments per week outbound from its base of operation for five different shippers to five different destination points. In contrast, a regular route, scheduled service general freight carrier hauling the same number of outbound shipments is more likely to be serving just one shipper and one destination point. Both carriers face empty back hauls unless they solicit for return loads at the destination points through representatives, branch offices, or ads. To secure five return loads the HHG carrier would have to solicit at five different points while the general freight carrier can solicit for five return loads at just one destination point. Given that there are likely to be at least some threshold costs in any type of solicitation effort (i.e. solicitation effort is not perfectly divisible), the HHG carrier will
have to spend more in securing return loads than the general freight carrier.

There is another factor making it more difficult for HHG carriers to solicit return loads. The one time nature of a HHG shipper's demand means that the carrier will have no notice of the front haul destination until a particular shipment has actually been booked and thus there is less time or insufficient time to solicit a return haul at the destination point. In contrast, the scheduled repeat front haul demands of general freight shippers give their carriers advance notice of front haul destination times and thus indicate where and when solicitation activity should occur.

The absence of return loads greatly retarded industry growth during the late 1920's and early 1930's. In those early days of the industry, HHG carriers tended to handle relatively short haul outbound shipments while longer distance shipments went by rail. This division of traffic reflects the differing cost structures of the two modes. Trucks tend to have lower terminal costs while railroads tend to have lower line haul costs. Thus, the cost advantage goes to trucks on short hauls and to
railroads beyond certain distances.

It was foreseen by industry pioneers that if return loads could be obtained, load factors would increase for HHG motor carrier operations and cost per shipment would decline. Cost savings passed on through lower rates would attract new HHG shippers into the market and make truckers more competitive on the longer haul shipments which had been going by rail.

Tracing the origin of various HHG carriers reveals that today's largest carriers were in fact pioneers in successful efforts to overcome the empty back haul problem. The largest HHG carrier, Allied Van Lines, began in 1924 as the Return Loads Bureau of the National Furniture Warehousemen's Association—a group of warehousemen-carriers. To quote the ICC:

Applicant, hereinafter called Allied, was formed because of the peculiar problem of HHG movers, that is, the empty vehicle-miles on return trips.3

The Allied plan intended that every long haul shipment, regardless of how or by which member it was booked, would be available for return haul by any member agent.

needing it. North American Van Lines, the second largest HHG carrier, was formed in 1933 by a group of motor carriers who were also warehousemen and who were dissatisfied with their connections for providing transportation service for the movement of HHG in interstate commerce:

The chief purpose of applicant's stockholders in establishing the corporation was to provide a clearing house for all contracts for moving originated by the stockholders, thus making it possible to match return loads, to effect profitable business for the stockholders, and to provide adequate service to the public at reasonable costs.\(^4\)

United Van Lines, the fourth largest HHG carrier, was formed in 1928 as Return Loads Service Inc.\(^5\) It was a company created to schedule return loads for independent moving firms carrying loads to other cities. Return Loads Service originated the idea of registering orders with a central office and providing a dispatching service.

As each of the above examples suggests, the key to solving a carrier's back haul problem was the establishment of representatives or agents at various points throughout the territory served by the carrier and the matching of moving vans and shipments through


\(^5\) Alexander, op. cit., p. 257.
a central organization. Although Allied, North American, and United were each formed by the merger of a group of motor carriers who then became agents of the parent company, it was more common for a carrier seeking to operate over a wide territory to simply secure agency representation at scattered points and to coordinate operations through centralized dispatching. Aero Mayflower, for example, set out in 1927 to establish its own nationwide organization. Sales offices were established throughout the country to provide return loads to the eastern part of the country.  

By the time the Motor Carrier Act of 1935 was passed, a relatively few HHG carriers had already developed extensive networks of agents. In addition to providing loads for carrier-agents seeking back hauls to their home bases, a large carrier would also operate vehicles in a roving service throughout that carrier's market area. Such vans would proceed from agent to agent picking up or delivering shipments and would travel without respect to a fixed base of operations. This mode of operation induced the ICC to grant such carriers irregular-route, non-radial operating certificates (i.e., licenses to operate as

described in (D) of the ICC's classification of motor carriers by type of service:

(A) Regular-route scheduled service—"between fixed termini and over a regular route or routes upon established or fixed schedules"

(B) Regular-route non-scheduled service—"between fixed termini and over a regular route or routes at intermittent intervals and not upon an established or fixed schedule"

(C) Irregular-route radial service—"over irregular routes from a fixed base point or points to points or places located within such radial area as shall have been fixed and authorized by the ICC...or from any point located within such radial area to such carrier's fixed base point or points"

(D) Irregular-route nonradial service—"over irregular routes between points or communities located within such general territory as shall have been defined geographically and authorized...and any other points or communities located within the same general territory without respect to a hub community or a fixed base point of operation"?

In contrast, the much more common irregular route radial certificates (C) were given to smaller HHG carriers who typically had no representation at destination points and thus were limited to those shorter haul outbound shipments from a town or city which could still be handled profitably even under empty back haul conditions. By way of comparison, motor carriers of general freight tended to receive operating certificates reflecting the type of service described in either (A) or (B).

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Other Characteristics of Demand

Type of Service Demanded

In 1968, HHG carriers handled an estimated 1,216,350 interstate shipments in which national accounts (employee transfers), military accounts, and private accounts represented, respectively, 25.4%, 36.7% and 36.8% of the total (the remaining 1.1% of the shipments were unidentified as to consumer group). The data for 1968 also indicates the seasonal nature of demand in the moving industry: 61.1% of all shipments are picked up during the May 1-October 31 period which roughly corresponds to summer recess for school children. There is very little difference between the three major types of accounts in the percentage of HHG shipments picked up during the 6 month peak season. Within each month, demand peaks are observed at the beginning and at the end as leases expire. The peak period of the year occurs during the latter part of August and the beginning of September.

The type of service demanded by consumers is suggested by a sample of 3,228 shipments handled by 16 of the largest HHG carriers as shown in Table 1. Since the largest moving vans can hold 3/4 of the average weight shipments indicated in the table a consumer typically finds himself sharing van space with others on interstate

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<table>
<thead>
<tr>
<th>Weight Bracket (Pounds)</th>
<th>0-3999</th>
<th>4000-7999</th>
<th>8000-11999</th>
<th>12000-15999</th>
<th>16000 and over</th>
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<td>Percentage Distribution</td>
<td>52.5</td>
<td>29.1</td>
<td>12.0</td>
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<td>2.5</td>
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<th>Mileage Block (Miles)</th>
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<th>500-999</th>
<th>1000-1499</th>
<th>1500-1999</th>
<th>2000-2499</th>
<th>2500 and over</th>
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<tr>
<td>Percentage Distribution</td>
<td>33.3</td>
<td>24.6</td>
<td>18.6</td>
<td>8.6</td>
<td>6.5</td>
<td>8.4</td>
</tr>
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</table>

Note: The average weight shipment in the sample was 4387 pounds and the average length of haul was 1025 miles.

hulls. The breakdown of shipments by mileage block in Table 1 shows a definite inverse relationship between length of haul and the propensity to ship HHG via common carrier.

The negative effect of distance on population mobility is shown more generally by data from the U.S. Bureau of Census comparing place of residence in 1970 with that of 1965. Using Massachusetts as a typical example, 395,588 people five years and older were classified as interstate movers i.e. their place of residence in 1965 was Massachusetts and it was a different state in 1970. Thirty four percent of the interstate movers went to contiguous states (N.H., Vt., N.Y., Conn., R.I.) representing moves of approximately 400 miles or less. Adding in other nearby states (Me., N.J., Pa., Md., Dela., and D.C.), 51% of the interstate moves were approximately 500 miles or less. On the other hand, only 21% of the interstate movers went to states west of the Mississippi River (approximate distances of 1000 miles or greater).

The population mobility data also gives a notion of the geographic distribution of potential shippers of HHG. Of the estimated 16 million interstate movers 1965-70, 62.3% had states east of the Mississippi River

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as their point of origin. Further concentration of potential shippers of HHG is revealed by the fact that the points of origin for almost half (47.6%) of all the interstate movers were states east of the Mississippi River and north of Tennessee and North Carolina. The distribution of potential shippers of HHG among the above indicated regions closely corresponds to the distribution of population among those regions. In 1970, 65.7% of the population was east of the Mississippi River and 51.5% was east of the Mississippi River and north of Tennessee and North Carolina.

The Census data presented above suggests that potential shippers of HHG are not uniformly distributed among the regions of the U.S. and one would also expect that within each region there would be a concentration of potential shippers among the important population centers. Furthermore, annual surveys by Allied Van Lines indicate that the flow of HHG shipments between geographic areas is unbalanced by direction. In 1970, Allied labeled the following states as "magnet states": Vt., N.H., Mass., R.I., N.C., S.C., Ga., Fla., Ark., Tex., Colo., Ariz., Mon., Nev., Calif., and Oreg. A magnet state is one which reports at least 55% of its total relocation activity as being inbound shipments.

Vermont, for example, had four inbound shipments for every one outbound shipment while both Arizona and Florida had two inbound shipments for every one outbound shipment. States with more outbound shipments than inbound shipments included: N.Y., N.J., Pa., W.Va., Ohio, Ind., Mich., Utah, and Ida. In terms of total (inbound and outbound) activity, California was the leader with New York and Texas running distant seconds.

Industry Growth

As Table 2 indicates, HHG carriers have experienced sustained growth. Industry revenue increased by 881% for the period 1949-1971 and this growth was not simply concentrated in the four firms who dominated the industry throughout the period. The combined revenues of those four firms increased at a somewhat lesser rate (826%). Available data shows that the revenues of motor carriers of general freight grew by 68% for the period 1957-1965. Table 2 shows that this rate of expansion was surpassed by the 87% increase realized by HHG carriers for that period.

Elasticity of Demand

Adequate data is not available for either a cross section or a time series approach to the estimation of elasticities. This is unfortunate because elasticity estimates would be useful for at least two reasons.
### Table 2

**INDUSTRY REVENUE FOR SELECTED YEARS (1949-1971)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Industry Revenue (Millions of Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>910.0</td>
</tr>
<tr>
<td>1965</td>
<td>673.4</td>
</tr>
<tr>
<td>1964</td>
<td>586.6</td>
</tr>
<tr>
<td>1963</td>
<td>575.6</td>
</tr>
<tr>
<td>1962</td>
<td>538.5</td>
</tr>
<tr>
<td>1961</td>
<td>492.2</td>
</tr>
<tr>
<td>1960</td>
<td>462.1</td>
</tr>
<tr>
<td>1959</td>
<td>434.8</td>
</tr>
<tr>
<td>1958</td>
<td>382.2</td>
</tr>
<tr>
<td>1957</td>
<td>359.2</td>
</tr>
<tr>
<td>1956</td>
<td>257.9</td>
</tr>
<tr>
<td>1955</td>
<td>221.8</td>
</tr>
<tr>
<td>1954</td>
<td>111.2</td>
</tr>
<tr>
<td>1950</td>
<td>92.8</td>
</tr>
<tr>
<td>1949</td>
<td></td>
</tr>
</tbody>
</table>

Data for years not listed was unavailable.

First, it will be argued that HHG carriers have been engaged in collusive rate making for the purpose of raising rates above a competitive level to generate monopoly profit. The extent to which a jointly determined rate can be raised (and profit increased) above the competitive equilibrium, however, depends on the elasticity of demand facing the group of firms. Ceteris paribus, the group will be more successful the more inelastic is demand.

It is usually asserted that the primary determinant of the price elasticity of demand for a service is the number of substitutes available for that service. Probably the two closest substitutes for the services of HHG carriers are (1) one-way rental trucks for do-it-yourself moving and (2) the selling of some or all of one's HHG at the point of origin and the purchase of replacement HHG at the point of destination. At present, however, there is no evidence available on the extent to which the disposal of HHG is considered to be a substitute for the services of HHG carriers. Information on do-it-yourself moving is also minimal. It is known that the truck rental industry has experienced considerable growth in recent years led by Ryder, U-Haul, E-Z Haul, and Hertz. The industry, however, still caters primarily to customers making moves within local areas. In 1970, the four dominant firms listed above had 60,000 trucks
available with 60-70% being rented for local use as opposed to one-way intercity use. 11

A second use to which estimates of demand elasticities could be put is in testing for price discrimination. It will be argued that HHG carriers acting in collusion do possess monopoly power i.e. the ability to raise price above marginal cost. Under such circumstances price discrimination would be profitable if consumers can be separated according to differences in their elasticities of demand and if resale between the submarkets can be prevented.

For firms selling services as opposed to tangible goods, the problem of resale between markets is relatively insignificant. HHG carriers, of course, provide a service not a commodity and HHG shippers can be separated geographically and by type of customer (private, national account, or military account). Shippers can also be separated on the basis of length of haul and weight of shipment. Resale between any of these submarkets would appear impossible and together with an alleged degree of monopoly power the potential for price discrimination does exist. Still unknown though is whether the elasticities of demand do differ significantly among the submarkets which could be created

11"Has One-Way Truck Rental Hit a Dead End?", Business Week, March 27, 1971, p. 44.
and, if so, how.

Cost Conditions
The Question of Economies of Scale for Trucking in General

Letting $C = f(Q)$ represent a firm's long run total cost function, economies of scale are said to exist if the elasticity of total cost with respect to output is less than one i.e. if:

$$\frac{dC}{dQ} < 1$$

The following diagram illustrates the possible sources of economies of scale:

![Diagram](image)

**Fig. 1.**--Sources of economies of scale

In (a) economies of scale result from (1) pecuniary economies or (2), holding factor prices constant, a given increase in $Q$ requiring less than a proportionate increase in all inputs (e.g. specialization and division
of labor). In (b) economies of scale arise because of the existence of some indivisible factor which gives rise to threshold costs. Threshold costs are those expenditures required to set up the minimal scale of plant and thus can be spread out over more units as output increases. The economies of scale of (c) arise from a combination of those factors present in (a) and (b).

It is generally argued that economies of scale are not significant in the trucking industry. The following quote from a standard transportation textbook is typical:

Operations may be started with a very small investment, and expansion may be undertaken with very small increments of investment in direct and almost immediate response to growth in traffic. . . . This will not result in an appreciable lowering of the average total unit cost of output, because this additional output comes in response to the incurrence of added costs that are largely proportional to output.\(^1\)

In an empirical cost study of motor carriers of general commodities, Meyer and his associates concluded that "in the trucking industry the small and large firms are on a cost parity."\(^2\) They attribute unit cost differences among firms primarily to differences in

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average lengths of haul. They argue that the absence of economies of scale reflects the insignificant magnitude of threshold costs in the industry. Other types of economies are apparent however in the trucking industry. The Meyer study does show the existence of economies of longer hauls and of larger shipments.

Cost per ton-mile decreases as length of haul increases due to the existence of terminal costs that are independent of length of haul. Cost per ton decreases as weight of shipment increases because certain terminal costs are also independent of the weight of shipment. To the extent that say average length of haul and firm size are positively correlated, economies of longer hauls could well be confused for economies of scale.

The Meyer study discusses another phenomenon which may be confused for economies of scale. Although threshold costs are virtually nonexistent, there are nevertheless some costs which are independent of the scale of output but are related to the geographic scope of a carrier's operations. Evidence indicates that holding geographic firm size (e.g. the number of route miles) constant, if output in ton-miles increases, total

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14 Ibid., p. 95.
15 Ibid., p. 94.
16 Ibid., p. 87.
costs will not increase in proportion. But as Meyer argues:

The observable economies of scale in the trucking industry are, therefore, probably a function of the intensity to which a given geographical route pattern is utilized and not of the total volume of the firm.\footnote{Ibid., p. 88.}

The point to emphasize is that these economies of high traffic density are equally available to small carriers. In fact a small carrier with few route miles may have a higher ton-miles/route miles ratio and thus a lower cost/ton-mile than a larger carrier operating over a much wider geographic area but with a lighter traffic density.


\[
C = b_0 + b_1 W + b_2 H + b_3 U
\]

where, 
- \(C\) = total operating expenses
- \(O\) = total number of shipments as a measure of output
- \(W\) = average weight per shipment
- \(H\) = average length of haul

and which was estimated as:

\[
b_0 = \text{estimated intercept term}
\]

\[
b_1 = \text{estimated coefficient for weight}
\]

\[
b_2 = \text{estimated coefficient for number of shipments}
\]

\[
b_3 = \text{estimated coefficient for length of haul}
\]

\[
b_4 = \text{estimated coefficient for other factor}
\]
\[ \log C = b_1 + b_2 \log O + b_3 \log W + b_4 \log H + U \]

Separate equations were estimated for each year 1955-1960. The estimated \( b_2 \) coefficients (all statistically significant) ranged from \( .932 \) to \( .959 \).\(^{19}\)

Combining the samples for all six years into one equation, the estimated \( b_2 \) was \( .947 \) i.e. a 10% increase in output is associated with a 9.47% increase in total cost.

Suspecting a bias due to error in the output variable, Warner developed an error correcting procedure. The corrected estimated coefficients ran as high as \( .98 \). Warner concludes that although the economies of scale seem slight, there are nevertheless, "some natural forces working for combinations and mergers."\(^{20}\)

After examining the relationship between individual cost categories and output, Warner concluded that the primary source of the observed economies of scale lies in the administrative and general expense category. He attributes this to advanced data processing and communications systems now being used by motor carriers to aid in the scheduling and consolidation of shipments.\(^{21}\)

\(^{19}\) \( b_2 \) ranged from \( .670 \) to \( .733 \) and \( b_4 \) from \( .284 \) to \( .359 \) implying both economies of heavier shipments and of longer hauls.

\(^{20}\) Warner, op. cit., p. 41.

\(^{21}\) Ibid., p. 34.
Warner also argues that, although he found some evidence of economies of scale:

The economies suggested are not overpowering in the sense that differences as there are cannot be overcome by a favorably situated small firm.\textsuperscript{22}

He believes, as does Meyer, that it is the various characteristics of shipments (e.g. length of haul) that primarily determine unit cost differences among trucking firms. Thus, a small or even a single truck operation can attain low costs if it is presented with a favorable enough collection of shipments.\textsuperscript{23}

The Nature of Scale Economies for Household Goods Carriers

The provision of transportation service by HHG carriers involves the performance of various functions including line haul vehicle operation and the dispatching of trucks to scheduled pickup points. Each function will be subject to increasing, decreasing, or constant returns to scale so that economies of scale may exist in some operations and not in others.

The widespread use of subcontractors (i.e. independent owner-operators and hauling agents) by large HHG carriers suggests that there are diseconomies of scale in vehicle operation. In a few other studies

\textsuperscript{22} Ibid., p. 40.

\textsuperscript{23} Ibid., p. 14.
of trucking, attention has been focused on line haul operation as distinguished from other operations. Diseconomies of scale in vehicle operation have also been noted in these studies.24

Table 3 shows that subcontracting does become more important as carrier size (measured in ton-miles) increases. The ratio of purchased transportation expense (i.e. subcontracting expenses) to total operating expenses does increase with increases in carrier size. Alternatively, the ratio of vehicle miles produced in owned equipment to vehicle miles produced in both owned and rented equipment declines as carrier size increases.

Another aspect of HHG carrier operations which appears to be subject to diseconomies of scale is the operation of agencies. Practically all agents are independent local firms performing various services for their principals under contractual arrangements.

Although the larger HHG carriers tend to subcontract out vehicle and agency operations, these operations must be coordinated to facilitate the matching of booked shipments with available van capacity. Coordination is achieved through the use of centralized

Table 3
CARRIER SIZE AND THE IMPORTANCE OF SUBCONTRACTING

<table>
<thead>
<tr>
<th>Carrier Size Groups</th>
<th>Number of Carriers in Size Group</th>
<th>Mileage Ratio&lt;sup&gt;a&lt;/sup&gt; (Average)</th>
<th>Expense Ratio&lt;sup&gt;b&lt;/sup&gt; (Average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Least 50 Million Ton-Miles</td>
<td>12</td>
<td>.036</td>
<td>.565</td>
</tr>
<tr>
<td>5-20 Million Ton-Miles</td>
<td>16</td>
<td>.211</td>
<td>.403</td>
</tr>
<tr>
<td>1-4 Million Ton-Miles</td>
<td>20</td>
<td>.623</td>
<td>.224</td>
</tr>
<tr>
<td>100-400 Thousand Ton-Miles</td>
<td>20</td>
<td>.801</td>
<td>.112</td>
</tr>
</tbody>
</table>

<sup>a</sup>The average ratio of owned vehicle miles to total vehicle miles.

<sup>b</sup>The average ratio of purchased transportation expense to total operating expenses.


Communication and dispatching facilities. The coordination function tends to be performed by the larger HHG carriers suggesting that there are economies of scale in matching available equipment with the shipments booked by agents.

To illustrate the nature of these scale economies, consider the situation of a relatively small carrier with an operating certificate of rather limited geographic scope. Assume that the carrier transports
shipments outbound from a home base of operation (e.g. a city). Let A represent the home base. Once an outbound shipment has been delivered to destination B the carrier faces three alternatives:

(a) return empty to A
(b) secure a return load to A
(c) secure a load to some other destination C

With (c), the van will return to home base only after traveling a triangular or more complicated route as it picks up and delivers additional shipments.

There are two methods which a carrier can use to exercise option (b) above. The carrier could secure a return load from an agent or branch office it has established at B for the purpose of soliciting B to A shipments. Alternatively, the carrier could purchase a return load from another carrier located at B and booking B to A shipments. This is done by "trip leasing" the driver and van to the other carrier in exchange for a hauling commission on the return load.

Option (c) can also be exercised in two different ways. The first possibility requires that the carrier have non-radial operating authority which includes points A, B, and C and has established agents at such

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points to solicit shipments. The carrier could then dispatch its van to other points before returning to A. (In contrast, if the carrier held only radial authority, it could only seek return loads to A.) The carrier, however, need not establish agencies or dispatching facilities to exercise option (c). As an alternative the carrier could purchase from another carrier a B to C shipment and then perhaps a C to A shipment. Again this involves leasing the van and driver to the other carrier in return for hauling commissions. While under lease the van is dispatched by and moves under the operating authority of the lessee who has agents established at numerous points. In practice the van would operate in roving service for weeks before returning to its home base. Such an arrangement is referred to as the "permanent lease" of vehicles in contrast to trip leasing.

Now consider the decision to secure a back haul rather than return home empty. The marginal cost of a back haul includes the cost of securing the shipment either through one's own agent or the implicit payment made to another carrier for a return load plus loading and unloading cost. In addition, one must include, as a cost, the value of time spent waiting for a return

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26 Ibid., p. 278.
load to be secured and that spent in loading and unloading the return load. A round trip with a return load obviously requires more time than a round trip which includes an empty back haul. The opportunity cost of the extra time required is the revenue foregone as a result of making fewer outbound shipments per month or year. This extra time is independent of the length of haul while revenue for the shipment increases as the length of haul becomes greater. As a result, return loads become more profitable, or less unprofitable, as the length of haul increases. It may be then that, for short hauls, it is profitable to return empty.

In those situations where it is profitable to avoid an empty back haul, the question becomes whether it is more profitable to establish one's own agents for solicitation purposes or to purchase a load from one of the larger carriers operating a network of agents over an extensive geographic area. There are two factors which explain why a carrier operating on a larger scale has an advantage in matching booked shipments with the available capacity of vans. Both factors serve to reduce the expected waiting time required to secure loads and reduced idle time leads to higher load factors and thus lower cost per shipment. First, the larger the volume of return loads booked for shipment to the
carrier's home base, the smaller will be the expected delay time experienced by any given van in securing a return load under a trip lease arrangement. In addition, a larger carrier with extensive operating authority is able to book a larger number of shipments for roving vehicles than a carrier not authorized to serve as many potential destination points. Thus, the economies of matching booked shipments with available vans on a large scale stem from the greater reduction in driver and equipment delay time that large carriers are able to achieve.

The argument made above is that there are economies of scale in eliminating the excess capacity held by carriers in the form of empty mileage; particularly that associated with empty back hauls. Another form of excess capacity is that represented by partially filled vans. There are definitely economies to be realized in the use of vans which can each hold up to five average weight shipments but to exploit these economies it is necessary to keep trucks fully loaded. The cost of achieving high capacity utilization in this sense must include time spent waiting for additional shipments. Here again, the larger carriers with broad operating authority can book more shipments
and thereby achieve a greater reduction in expected delay time for drivers and equipment. The matching of shipments and vans on a large scale then enables small carriers and independent owner-operators\(^{27}\) to operate the larger vans with the expectation that high load factors can be achieved.

The previous analysis of cost conditions for HHG carriers leads to interesting policy implications. First, diseconomies of scale in vehicle operation suggest that many small scale carriers and independent owner-operators would be viable competitors in an unregulated industry if tied to a central clearinghouse for shipments. On the other hand, the existence of economies of scale in matching booked shipments with available van capacity suggests that this activity would tend to become concentrated in an ever smaller number of firms. Although the traditional natural monopoly argument for regulation is inapplicable to line haul vehicle operations, this aspect of HHG carrier activity is, nevertheless, thoroughly regulated. A line haul vehicle must be owned by a licensed carrier or hauling HHG under contract with a licensed carrier. Furthermore, the license (operating certificate) limits

\(^{27}\)Owner-operators and their equipment are under permanent lease to the larger carriers and are used in roving service, thereby supplementing the permanent lease vehicles obtained from carrier-agents.
the operations to prescribed geographic areas. Regulation also covers the rates charged for the transportation service provided. If the natural monopoly argument for regulation is accepted, it is an argument not for the regulation of vehicle operation but of the function of matching booked shipments with available van capacity.

III. The Regulatory Framework

The Demand for Regulation

It is generally argued that the railroads were one of the earliest and most important proponents of interstate motor carrier regulation. The railroads wanted protection from motor carrier competition. As early as 1926 the railroads began to experience a diversion of traffic to motor carriers. The rail share of total intercity freight traffic (public and private ton-miles) fell from 76.56% in 1926 to 67.62% in 1935. The motor carrier share rose from 2.74% in 1926 to 5.81% in 1935. Of more particular concern to the railroads, however, was the fact that the motor carriers were taking the most profitable traffic (in industry terms they were cream skimming). Under value-of-service

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rate-making, the rail traffic most discriminated against in pre-trucking days was short haul high valued traffic. But it was precisely this type of traffic that was most suitable to being hauled in truck. The motor carriers then became a threat to the discriminatory rate structure of the railroads.

In 1926, on behalf of railroad interests, a bill was introduced by Senator Cummins to regulate interstate motor carriers.\(^{30}\) The bill had been drafted by the legislative committee of the National Association of Railroad and Utility Commissioners and included the following provisions:

1) certificates of public convenience and necessity are required for all interstate common motor carriers. In granting certificates, the Interstate Commerce Commission must take into account the effect of the proposed service on existing railroads and motor carriers.

2) rates must be printed, filed and open to inspection.

3) rates must be adhered to.

4) discounts and rebates were prohibited.

5) 30 days' notice must be given for a rate change.

6) the ICC can suspend proposed rates. It must then determine if the proposed rate will take away business from other rail and motor carriers and/or induce competitive rate cuts which would lead to "unreasonable competition."\(^{31}\)


The underlined portions of the provisions indicate how the railroads intended to deal with the competitive threat posed by motor carriers.

Motor carrier interests feared that they could not survive such legislation particularly since it would be administered by a regulatory commission composed of "railroad minded" people. The following comment made at the hearings by A.T. Marsh of the Motor Truck Association of Connecticut was typical of motor carrier sentiment:

It seems rather strange to some of us that a bill of this kind should be drafted without consulting the shipper and the operator of a certain line of transportation (motor carriers) that would be effected by this bill. It was born in iniquity, drawn up as a measure to eliminate and not to regulate.32

HHG carriers were represented at the hearings by W.B. Hiner of the American Red Ball Transit Co., the first interstate mover and R.T. McKenna of the National Furniture Warehousemen's Association, the first organized group of interstate movers. Hiner was critical of the role played by the railroads in the drafting of the bill and McKenna requested that HHG carriers be exempted.

The Cummins Bill did not pass through Congress.

As reported in Traffic World:

32Ibid., p. 141.
... opposition by motor truck operators in interstate commerce to the pending bill, it is believed, is the principal obstacle to action by Congress at this time.33

In 1932, a bill similar to the Cummins Bill was introduced in the Senate by Senator Couzens.34 The bill was supported again by the National Association of Railroad and Utility Commissioners but had gained added support from the ICC. The strong railroad interest in the bill was represented by such testimony as that of C.D. Duncan of the Association of Railway Executives:

Railroads believe that regulation of motor carriers would return some of the traffic to them. They are particularly worried however that without regulation, unrestrained unfair competition would result in further losses of traffic to motor carriers.35

The ICC at the time was concerned about the unhealthy financial condition of its regulatees—the railroads. The commission had undertaken a fact finding investigation of motor carriers in 1932 and reached the following conclusions:


34U.S. Congress, Senate, Regulation of Motor Carrier Transportation, S. 2793, 72nd Cong., 1st sess., 1932.

35U.S. Congress, Senate, Committee on Interstate Commerce, Regulation of Motor Carrier Transportation, Hearings before the Committee on Interstate Commerce, Senate, on S. 2793, 72nd Cong., 1st sess., 1932, p. 346.
1) In some respects motor carrier service is superior so railroads should make use of it.
2) There is substantial competition between railroads and trucks and buses for freight and passenger traffic and that this competition is increasing.
3) Such competition is conducted under conditions of inequality, particularly in regard to regulation.
4) The unsatisfactory financial condition of the railroads is due to unrestrained competition by rival transportation agencies as well as by general business condition.
5) There is excess carrying capacity of existing transportation facilities.
6) Unrestrained competition is incompatible with the aim of coordination under regulation.
7) Federal regulation of motor carriers is desirable and in the public interest.36

As stated in (7) above, the ICC concluded that regulation was in the public interest although it admitted:

So far as this record shows, the demand for Federal regulation of the transportation of property by motor trucks comes mainly from the railroads. There is little present demand by shippers for such regulation.37

The ICC simply argued that regulation was in the public interest regardless of whether the public was aware of it or not.38 The Commission held that unrestrained competition of trucks with railroads could hurt the public interest in the following ways:

1) Widespread and unjust rate discrimination between shippers.
2) Losses on investment in railroads and motor carriers.

37Ibid., p. 382.
38Ibid., p. 382.
3) A breakdown of value-of-service rate-making for railroads.
4) Loss of jobs and lower wages in the transportation industry.
5) Reduced highway safety for motorists.\(^{39}\)

The ICC, in its own investigation, found little evidence of (1). In any event, rate discrimination is also a symptom of rate competition which an industry itself would like to eliminate.\(^{40}\) Numbers (2), (3), and (4) suggest that the ICC's conception of the public interest is limited to the industry's interest. Only (5) shows a genuine concern for the public but economic regulation (e.g. control over rates) is not necessary to deal with this problem.

Despite the lobby effort of railroad interests and the ICC, the Couzens Bill was not passed by Congress. Such legislation needed additional support and that support would eventually come from the motor carriers themselves.

The attitude of motor carrier interests toward regulation began to change at the time the Rayburn Bill was introduced in 1934.\(^{41}\) Evidence of this change can

\(^{39}\)Ibid., p. 383


be found in the report of the Federal Coordinator of Transportation issued in 1934. The Office of Federal Coordinator of Transportation was created by the Emergency Transportation Act of 1933. Aside from emergency provisions to deal with the financial crises faced by railroads, the Act charged the Federal Coordinator (who was to be appointed from the ICC) with investigating other means of improving transportation conditions in the country. The report issued in 1934 dealt with various questions including: should other transport modes be regulated? The report concluded that motor carrier regulation was needed to stop destructive competition and Federal Coordinator Joseph B. Eastman became a strong supporter of the Rayburn Bill.

Total intercity freight traffic (public and private) shrunk considerably because of the depression. The railroads experienced the greatest loss of traffic: from 455 billion ton-miles in 1929 to 238 billion ton-miles in 1932. Even the motor carriers who had experienced rapid growth in the 1920's suffered a slight dip in traffic: 19.7 billion ton-miles in 1929 to 18.8 billion ton-miles in 1932. Railroad and motor carrier interests began to speak of

\[\text{\footnotesize\textsuperscript{42}U.S. Congress, Senate, \textit{Regulation of Transportation Agencies}, S. Doc. 152, 73rd Cong., 2nd sess., 1934.}\]

\[\text{\footnotesize\textsuperscript{43}Nelson, \textit{Railroad Transportation}, Appendix A.}\]
"cut-throat" or "destructive" competition, "rate wars," and "demoralized" or "chaotic" conditions that were plaguing their industries.

The demand for regulation of motor carriers had originated with the railroads, was taken up by the ICC, and by 1934 was being voiced by the larger, established motor carriers. The typical argument made by motor carriers for regulation appears in the report of the Federal Coordinator. In such arguments, the trucking industry was correctly characterized as one with easy entry. Ease of entry was partly due to (1) the small scale nature of operations which made possible an intial investment as little as a down payment on a single truck and (2) the fact that the labor used in trucking was relatively unskilled.

The depression pushed many unemployed but optimistic workers into the young trucking industry and made second-hand trucks available at low prices. The resulting increased supply of trucking services together with declining demand created downward pressure on rates. As rates actually fell below remunerative levels one would have expected to observe resources leaving the industry but, with high levels of unemployment elsewhere, the opportunity cost of being an owner-operator was low.

The result was that resources exited only very slowly and rates remained depressed. It appears then that the poor financial condition of the industry at the time was largely depression induced; a condition which would be alleviated once aggregate demand in the economy began to increase.

The large established motor carriers, however, preferred to explain industry conditions in terms of real-life villains who were accused of engaging in destructive competition. New entrants were referred to as "shoestring, fly-by-night operators." It was argued that these "irresponsible operators," through ignorance, (rather than short term necessity) were charging rates which failed to cover total costs. Blame was also placed on shippers who encouraged rate cutting and truck salesmen who allegedly high-pressured inexperienced, poor, and ignorant individuals into buying trucks.

In the 1934 report, the Federal Coordinator compared the pre-regulation period of motor carriers with that of railroads and concluded:

There is the same need for bringing some degree of order out of chaos as there was in 1887, when federal regulation of railroads became clearly necessary.\(^{45}\)

The Federal Coordinator argued that, as with truckers,

\(^{45}\)Ibid., pp. 23-24.
it was the "evils of competition" that led to railroad regulation. Revisionist thinking by some economists has shown that, more specifically, the Interstate Commerce Act of 1887 served to facilitate collusion among railroads and thereby stabilize the railroad cartels that railroads could not stabilize on their own. 46

The Federal Coordinator's report also claimed that public support was growing for regulation. Shipper complaints however can be more directly linked to the downward spiral of rates created by prolonged depression conditions than to the absence of regulation. Some shippers, for example, could not secure reliable service because motor carriers kept going bankrupt. Others complained that continual rate changes made the transportation factor in the cost of doing business unpredictable. Continual rate changes (which were generally downward) also gave some shippers the uneasy feeling that perhaps competitors at any given point in time were paying less for comparable trucking services.

Although motor carrier support for regulation was growing, the hearings on the Rayburn Bill indicated that truckers still feared railroad endorsed legislation to be administered by the pro-railroad ICC. The Rayburn Bill did not pass as motor carriers opted for National Recovery

46 Hilton, "What Went Wrong and What to Do About It," p. 40.
Administration Codes of Fair Competition which were designed to restrain competition via self-regulation.

The "Code of Fair Competition for the Trucking Industry" contained provisions which were similar to those found in the Rayburn Bill.47 Apparently motor carriers had a strong preference for self-regulation over ICC administered regulation since, as the Federal Coordinator observed:

The attitude of the industries toward these codes is in itself strong support for the conclusions herein reached as to the need for Federal regulation, effects of unrestrained competition and of the fact that the Government must in some way assist in imposing the necessary restraint.48

It proved difficult to police carriers and enforce the provisions of the trucking code. In addition, the NRA Codes of Competition were declared unconstitutional in May, 1935. At this point motor carrier opposition to federal regulation ceased. Senate bill 1629, drafted by the Federal Coordinator of Transportation and based on the Rayburn Bill, was introduced.49 It was eventually


48Regulation of Transportation Agencies, p. 35.

49U. S. Congress, Senate, A Bill to Amend the Interstate Commerce Act, S. 1629, 74th Cong., 1st sess., 1935.
passed and became known as the Motor Carrier Act of 1935. Although containing all of the entry control and rate regulation provisions of the Cummins Bill (see page 43) which had been introduced nine years earlier, motor carrier interests were able to strike such pro-railroad phrases as those underlined.

This subsection has shown that the demand for federal regulation of motor carriers originated with the railroads and eventually spread to the motor carriers themselves. It was then primarily the sellers of transportation service, not buyers, who lobbied for economic regulation. The intent of the legislation was to restrain competition among motor carriers and between motor carriers and the railroads; thus, the Motor Carrier Act of 1935 was intended to protect competitors, not to promote competition.

The purpose of the next subsection is to determine to what extent the regulatory provisions actually adopted for interstate motor carriers, and HHG carriers in particular, were consistent with the aim of protecting competitors.

Nature of Regulation Adopted

Control of Entry

With the passage of the Motor Carrier Act of 1935, it became illegal to transport HHG in interstate commerce without a certificate of public convenience and necessity issued by the ICC. With its licensing power, the ICC could exercise direct control over the number of HHG
carriers that would be permitted to compete. Not only can the ICC restrict the number of competitors; it also assigns each carrier to a specific geographic market area. When new certificates are issued, the ICC under Section 208 of the Motor Carrier Act is authorized to specify the nature of the service (regular or irregular route, radial or non-radial, etc.) and the geographic area which the carrier is permitted to operate. In effect the Commission could carve out grants of jurisdiction to carriers in a manner which minimizes competition in any particular area.

The Commission was also given some control over expansion by existing carriers. A carrier could not increase the geographic scope of its operations without first obtaining an additional operating certificate from the ICC for the new service proposed. The provision could serve to prevent uncontrolled encroachment into a competitor's territory. The ICC was prohibited however by Section 208 from limiting the capacity of existing carriers. On the one hand this meant that the benefits of industry growth would accrue to existing carriers who had expanded. On the other hand though this provision left the ICC impotent to restrain certain forms of non-price competition which might arise such as the greater frequency of service made possible by the acquisition of additional equipment.
Aside from the inability to control the amount of equipment operated by carriers, the ICC has the power to pursue a restrictive entry policy. In practice though, such a policy might be thwarted to some extent by interline operations. There are two forms of interlining practiced by HHG carriers: (1) the actual transfer of a shipment from the van of one certified carrier to the van of a different certified carrier and (2) the transfer from one certified carrier to another of a partially or fully loaded van—this latter practice being formally referred to as interchange of equipment.

Interlining permits a carrier to book shipments whose destination points lie beyond the scope of its operating authority. The ICC had created highly fragmented market areas with its original grants of certificates. As shippers' transportation demands changed over time (e.g., lengths of haul tended to increase), in many areas shippers found their local or regional carriers not authorized to serve desired destinations. Perhaps in an effort to head off protest by shippers and their elected representatives, the ICC permitted interlining to develop.

The possibility of interlining does suggest that the barriers to entering particular market areas are not as formidable as that indicated by the division of markets among carriers as set forth in their operating certificate descriptions. The actual extent of interline activity and
whether or not it is profitable will be discussed in Chapter III.

Rate Regulation

Pricing policy for HHG carriers is strongly conditioned by the regulatory environment. The major provisions of the Motor Carrier Act concerning rates are:

Section 217(a) Tariffs must be published, filed with the ICC and kept open to public inspection.

Section 217(b) Tariffs must be adhered to and rebates are prohibited.

Section 217(c) A carrier must give thirty days notice of a proposed rate change.

Section 217(d) It is unlawful to operate without properly published and filed tariffs.

Section 216(d) Unjust and unreasonable rates are unlawful. Undue preference or unjust discrimination is unlawful.

Section 216(e) If the ICC rules after complaint by any interested party or on its own initiative that a rate is unjust, unreasonable, unduly preferential, or unjustly discriminatory it can prescribe the lawful exact, maximum, or minimum rate.

Section 216(g) The ICC can suspend a proposed rate after a complaint has been filed or on its own initiative for up to seven months while it determines the lawfulness of the proposed rate. The burden of proof that the rate is just and reasonable is on the carrier who has proposed the change.50

The first point to be made is that each of the mentioned provisions has its counterpart in Part I of the Interstate Commerce Act which deals with railroad regulation. As previously argued, the purpose of railroad regulation was to facilitate collusion and thereby stabilize the railroad cartels.

Section 217(a) and (d) require open pricing by carriers. This would enable shippers to determine what their competitors are paying for trucking services. Open pricing, however, also makes price matching easier and thereby promotes rate uniformity and discourages competitive rate reductions. Section 217(b) outlaws secret price cuts. Railroad rebates, which had irritated those shippers who had not received them, served as indirect price cuts for railroads attempting to cheat on cartel rate agreements. The requirement that a carrier must give notice (Section 217(c)) of a proposed rate change can also serve to prevent secret price cuts.

Rates for HHG carriers and other motor carriers are set by the industry; not the Commission. The ICC however does have the power under Section 216(d) to determine if such rates are lawful. Under Section 216(e) for example a shipper or community may complain that it is being charged discriminatory rates. The ICC will then rule whether the rates are unlawful. Carriers can also benefit from the prohibition of discriminatory
rates. Charging lower rates in markets where greater competition means each carrier faces a more elastic demand is inferior from the carriers' point of view to a situation in which all carriers are forced by law to charge a higher rate in such markets.

Under Section 216(e), shippers may complain that a rate is unreasonably high. If the ICC agrees, it can prescribe the maximum lawful rate. But Section 216(e) also gives carriers the right to complain that a competitor's rate is too low. In such a case the commission may prescribe the lawful minimum rate. Giving the ICC the power to set minimum rates is of course consistent with the industry's aim of eliminating cut-throat or destructive rate competition.

With the suspension power granted in Section 216(g), the ICC can even outlaw rates before they become effective. To make this provision workable however interested parties must have adequate notice of proposed rate changes so that protests can be filed before the rate is to take effect. This is the reason for the thirty days notice required in Section 217(c). Railroads have the same thirty days requirement; shorter periods had been tried but were found to be too short to prevent competitive rate cuts i.e. the so-called "midnight tariffs" of railroads in the
late 1800's. If a proposed rate is suspended by the ICC, the burden of proving that the rate will be just and reasonable lies with the carrier who proposed the rate, not the protestor. On the one hand this lowers the cost to shippers who complain that rates are too high; on the other hand the provision tends to discourage carriers from attempting to make competitive price cuts.

The nature of the rate regulations is such that they could benefit either shippers or sellers depending upon how they are actually administered. That the regulatory framework has been used in practice to facilitate collusion rather than promote competition is discussed in Chapter III under market conduct.

There is one category of HHG carrier traffic that is not subject to the above regulations. Under Section 22 of Part I of the Interstate Commerce Act, any ICC regulated carrier may deviate from its lawfully published tariff on file at the ICC and transport property and persons for federal, state, and local governments free or at reduced rates. This provision is particularly important for HHG carriers because shipments for the Department of Defense account for approximately 1/3 of all interstate HHG shipments. Potentially this provision represents a threat to industry profits as the ICC is

\[51\] Regulation of Transportation Agencies, p. 22.
prevented from exercising its minimum rate powers if competition for military traffic creates downward pressure on rates.

Special Rules for Household Goods Carriers

In spite of the seemingly comprehensive set of rate regulations contained in the Motor Carrier Act of 1935, it quickly became apparent that certain of the provisions could be successfully evaded by HHG carriers. According to the ICC, both shippers and carriers were complaining that HHG carriers, in competing for traffic, had followed practices which were "unreasonable, unduly preferential, and unjustly discriminatory."^52

The Commission distributed over 2000 questionnaires to HHG carriers to obtain information on the practices of the industry. Apparently no questionnaires were sent to any shipper groups. Based on the questionnaire responses, the ICC drafted a set of rules designed to promote greater uniformity of practices in the industry.^53 Public hearings were held prior to adoption of the rules in 1939 with HHG carriers being the principal attendees.

The practice of the time was to publish rates on a cubic-footage basis varying with distance. Prospective


^53Ibid., pp. 505-507
shippers would usually obtain at least one estimate of transportation charges prior to contracting with a carrier. According to the Commission:

In competing for business, unscrupulous operators will purposely underestimate the total footage of a prospective load by failing to list items or by improperly listing them, for the purpose of obtaining the transportation contract. At destination these carriers will either knowingly and willfully collect charges on the basis of the underestimate, a direct violation of the act, or demand that the customer pay the correct charges, claiming that an innocent error was made in the estimate or that the customer added articles not shown the estimator. 54

Underestimates as a competitive tactic are understandably objectionable to those shippers required to pay a final bill higher than the estimate in spite of not having added extra articles to the load. But for the carriers, the primary proponents of a set of rules, the problem was that "the present method of operation is a tool in the hands of the dishonest operator with which to rebate, discount, and otherwise evade the requirements of the act." 55

The rule actually adopted to eliminate underestimation as a competitive tactic required that rates be established in terms of cents per hundred pounds or fractions thereof and upon no other basis. Public  

54 Ibid., p. 478.  
55 Ibid., p. 479.
scales were available throughout the country and as the proponents of the rule argued:

... the weighing of shipments by a disinterested weighmaster would remove much of the human element inherent in the present system, and that substitution of a weight ticket for a measurement sheet which is difficult of verification would afford us a definite means of policing the industry and enforcing the provisions of the act. 56

The Commission condemned another practice that had developed since the passage of the Motor Carrier Act:

Certain unscrupulous practices have been followed by some carriers in the performing of accessorial and terminal services. Such services have been performed and not charged for, or a single amount has been charged covering all such services which amount may have been greater or less than the sum of the proper charges for the services rendered.57

Again it must be conceded that shippers would have justifiable objections to the extent that they are overcharged but one would not expect complaints from shippers being undercharged.

As the carriers who proposed the rules recognized, the provision of accessorial services (primarily packing and unpacking) at free or reduced rates serves as an indirect price cut. Such non-price or indirect price competition would appear profitable to an individual carrier if its transportation rates were being held above marginal costs by say minimum rate regulation.

56 Ibid., p. 479.
57 Ibid., p. 489.
The adoption of the following rule then is consistent with the aim of suppressing service competition that serves as indirect rate cutting:

Such common carriers shall establish . . . the rates and charges to be made for each accessorial service rendered in connection with the transportation of household goods. The tariffs establishing such rates and charges shall separately state each accessorial service to be rendered and the rate and charge therefor. The rate for transportation of such goods shall not include the charge for any accessorial service and no such services other than those for which separate rates and charges have been established shall be rendered by any such carrier.58

**Antitrust Exemption of Rate Bureaus**

The passage of the Motor Carrier Act of 1935 was quickly followed by the formation of motor carrier rate bureaus. The primary purpose of such organizations is to publish and file tariffs on behalf of their members. The two major rate bureaus representing interstate HHG carriers are the Household Goods Carriers' Bureau (formed in 1936) and the Independent Movers and Warehousemen's Association (formed in 1935; now named Movers and Warehousemen's Association of America).

Based on past regulatory experience, the ICC could not have been surprised to see the rapid formation of motor carrier rate bureaus. The original Interstate Commerce Act of 1887 was followed by the formation of the first railroad rate bureau (Trans-Missouri Freight

58Ibid., p. 489.
Association) in 1889. This rate bureau was eventually convicted of price fixing under Section I of the Sherman Act and was forced to dissolve. The ICC opposed the prosecution of rate bureaus by the Department of Justice arguing that:

In justice to all parties we ought probably to add that it is difficult to see how our interstate railways could operate with due regard to the interest of the shipper and the railway without concerted action of the kind afforded through these associations.

The railroad rate bureaus continued to operate however in a curious legal limbo as the Department of Justice refrained for 50 years from making further prosecutions. Prosecutions were resumed once again in the 1940's with the formation of motor carrier and water carrier rate bureaus. The legal status of these organizations was finally settled in 1948 with an amendment to the Interstate Commerce Act which became Section 5a and is called the Reed-Bulwinkle Act. By this amendment, rate bureaus were exempted from prosecution under the antitrust laws if their rate agreements were approved.


by the ICC. In effect, collusive rate making by HHG carriers had been legalized.

IV. Summary

Chapter II has dealt with the basic demand, supply, and regulatory characteristics of the HHG carrier industry. As described in Section II, HHG carriers are faced with a demand which is geographically diffuse and non-repetitive in nature. In the early days of the industry, individual carriers attempted to meet this demand by making outbound shipments from towns and cities where geographic concentrations of demand occurred. With no representation at destination points, vans typically returned home empty. The first attempts to deal with the empty back haul problem involved the banding together of geographically scattered carriers. Central clearinghouses for shipments were created and dispatchers served to match shipments booked at points throughout the country with the available return haul capacity of participating carriers. In addition, to avoid the joint product nature of front hauls and back hauls, other vehicles were operated in roving service without respect to a fixed base of operations.

The following characteristics of demand were also identified in Section II:
(1) there are three distinct and equally important consumer groups: families, employees, and military personnel
(2) demand varies seasonally and within any given month
(3) the average weight of a shipment is less than a typical van's capacity
(4) the propensity to ship HHG is inversely related to distance
(5) demand is not uniformly distributed throughout the country and the flow of HHG traffic is not necessarily balanced by direction
(6) the demand for the services of HHG carriers has been steadily increasing over the decades
(7) the price elasticity of demand is unknown but elasticities among the three consumer groups are likely to differ.

Section II's analysis of cost conditions for HHG carriers indicates that there are diseconomies of scale in hauling operations and agency operations. On the other hand, there are scale economies to be realized in dealing with the excess capacity associated with empty back hauls and the use of multiple shipment vans. The matching of booked shipments with available van capacity through a large scale centralized dispatching and communication facility would be expected to increase vehicle capacity utilization and thereby lower unit cost.

The regulatory framework within which HHG carriers operate is another basic characteristic of the industry and it is one which affects both market structure and conduct. In the first part of Section
III, the legislative history of the Motor Carrier Act of 1935 was traced. It was shown that the demand for motor carrier regulation originated with the railroads and was eventually voiced by motor carrier interests. The legislative intent was to restrain competition among motor carriers and between motor carriers and railroads i.e. the intention was not to promote competition—it was to protect transportation firms from competition.

The regulations which were adopted for HHG carriers do facilitate the suppression of competition in the industry. The ICC has the power to limit the number of competitors, to allocate market areas among carriers, and to prevent direct encroachment by one carrier into a competitor's territory. The benefits to HHG carriers accruing from a restrictive entry policy however would be reduced if the ICC's inability to limit the amount of equipment available to carriers has actually led to excessive competition on the basis of immediate availability of service and if the practice of interlining has effectively eliminated the market boundaries delineated in operating certificates. These two possibilities will be examined in Chapter III.

Open pricing, adherence to tariffs, outlawing of discriminatory rates, the power to set minimum rates, the right of protest, ICC suspension power, separate
pricing of accessorial services, and antitrust immunity all facilitate the suppression of direct and indirect rate competition. The previous statement however does not hold for rates on military shipments due to the Section 22 exemption of such rates from ICC control.

It has been conceded in this section that the content of the regulations is such as to allow for the view that it is the shippers who would be expected to benefit from the regulation of HHG carriers. Whether in fact it is the shippers or the carriers who benefit depends upon how the regulations have actually been administered. It will be shown in Chapter III's sections on market structure and market conduct that the ICC has acted to suppress competition; not to promote it.
CHAPTER III

MARKET STRUCTURE AND CONDUCT

I. Introduction

Chapter III consists of four sections. Section II on market structure begins by presenting available data on the number and size distribution of HHG carriers. The shortcomings of the published data are then described. The second part of Section II examines the condition of entry for the industry. Particular emphasis is placed on the ICC's creation of entry barriers through its power to issue licenses to operate (certificates of public convenience and necessity). ICC control over the geographic expansion of existing carriers is also discussed. The final part of Section II describes and analyzes two unique structural features of the industry: (1) agency systems and (2) subcontractors who actually haul many of the HHG shipments.

In the first part of Section III on market conduct, it is argued that the operation of rate bureaus and the ICC's administration of regulations have served to facilitate collusive rate making among HHG carriers. Whether or not this argument holds on shipments for the military,
where monopsony buying power is present and minimum rate regulation is absent, is also analyzed in the first part of Section III.

The second part of Section III analyzes the extent to which non-price competition would be expected to erode the monopoly gains generated by protective regulation. Interlining, another possible source of monopoly rent dissipation, is analyzed in the third part of the section on market conduct. The last part of Section III describes the nature of mergers among HHG carriers and their effect on market structure.

II. Market Structure

The Number and Size Distribution of Sellers

Presentation of Available Data

Table 4 presents the best estimates for available years of the number of interstate motor carriers certified by the ICC to transport HHG. Although the number of carriers has declined substantially since 1939, there are still over 2000 firms in the industry. Taken by itself, such a large number would suggest a competitively structured industry.

The ICC has published data for the years 1957-1964 on the size distribution of HHG carriers. As shown in Table 5 for 1964, there is a wide range in firm size with 605 carriers having operating revenues of less than
### Table 4

**NUMBER OF HOUSEHOLD GOODS CARRIERS**

<table>
<thead>
<tr>
<th>Number of Household Goods Carriers Certified By the ICC</th>
<th>Date of Estimate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>4500</td>
<td>1939</td>
<td>Traffic World</td>
</tr>
<tr>
<td>4000</td>
<td>1950</td>
<td>Taff (1950 edition)</td>
</tr>
<tr>
<td>4038</td>
<td>1954</td>
<td>60 MCC 701 (1954)</td>
</tr>
<tr>
<td>3641</td>
<td>1955</td>
<td>Taff (1955 edition)</td>
</tr>
<tr>
<td>3200</td>
<td>1962</td>
<td>Barrons</td>
</tr>
<tr>
<td>3100</td>
<td>1966</td>
<td>Rivers</td>
</tr>
<tr>
<td>3000</td>
<td>1970</td>
<td>Alexander</td>
</tr>
<tr>
<td>2400</td>
<td>1971</td>
<td>Business Week</td>
</tr>
<tr>
<td>2703</td>
<td>1972</td>
<td>ICC Printout</td>
</tr>
<tr>
<td>2523</td>
<td>1973</td>
<td>ICC Printout</td>
</tr>
</tbody>
</table>

Source Elaboration:


"Index of HHG Carriers," Interstate Commerce Commission, Section of Motor Carriers: Certificates.
Table 5

NUMBER AND SIZE DISTRIBUTION OF HOUSEHOLD GOODS CARRIERS (1964)

<table>
<thead>
<tr>
<th>Revenue Bracket (Dollars)</th>
<th>Number of Reporting Carriers</th>
<th>Number of Carriers (Percent Distribution)</th>
<th>Total Operating Revenues (Percent Distribution)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 10,000,000</td>
<td>7</td>
<td>.32</td>
<td>40.92</td>
</tr>
<tr>
<td>5,000,001-10,000,000</td>
<td>8</td>
<td>.36</td>
<td>11.08</td>
</tr>
<tr>
<td>2,500,001-5,000,000</td>
<td>11</td>
<td>.50</td>
<td>6.76</td>
</tr>
<tr>
<td>1,000,001-2,500,000</td>
<td>18</td>
<td>.81</td>
<td>4.32</td>
</tr>
<tr>
<td>500,001-1,000,000</td>
<td>58</td>
<td>2.62</td>
<td>6.59</td>
</tr>
<tr>
<td>300,001-500,000</td>
<td>86</td>
<td>3.88</td>
<td>5.65</td>
</tr>
<tr>
<td>200,001-300,000</td>
<td>135</td>
<td>6.10</td>
<td>5.62</td>
</tr>
<tr>
<td>100,001-200,000</td>
<td>399</td>
<td>18.01</td>
<td>9.71</td>
</tr>
<tr>
<td>50,001-100,000</td>
<td>399</td>
<td>18.01</td>
<td>5.02</td>
</tr>
<tr>
<td>25,001-50,000</td>
<td>489</td>
<td>22.08</td>
<td>3.05</td>
</tr>
<tr>
<td>Up To 25,000</td>
<td>605</td>
<td>27.31</td>
<td>1.28</td>
</tr>
<tr>
<td></td>
<td>2215</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

$25,000 while 7 carriers earned revenues in excess of $10 million. The inequality of firm size is indicated by the fact that the smallest 98.01% of the carriers account for only 41.24% of industry revenue. The remaining 58.76% of industry revenue is concentrated in just 26 firms.

Sufficient information is available for calculating the familiar 4-firm and 8-firm concentration ratios for several years. The results are presented in Table 6. The 4 largest firms in each year have been Aero Mayflower, Allied Van Lines, North American Van Lines and United Van Lines. Those among the next 4 largest for the 12 years considered include: Bekins VL (12 times), National VL (8 times), Greyhound (8 times), Republic (6 times), Atlas VL (5 times), and Dean VL (5 times). Table 6 shows that for the period 1949-1964 the industry became somewhat less concentrated i.e. smaller firms were growing at the expense of the 8 largest firms. Combining the number of carriers data of Table 4 with the concentration ratios of Table 5, one could characterize the industry as being midly concentrated with a very large competitive fringe.

1The number of reporting carriers is less than the number certified because some carriers are delinquent in reporting and some earn no revenue for interstate operations for a particular year.
Table 6

INDUSTRY CONCENTRATION RATIOS FOR SELECTED YEARS

<table>
<thead>
<tr>
<th>Year</th>
<th>4-Firm Ratio</th>
<th>8-Firm Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>33.9</td>
<td>44.2</td>
</tr>
<tr>
<td>1963</td>
<td>33.5</td>
<td>41.6</td>
</tr>
<tr>
<td>1962</td>
<td>34.2</td>
<td>42.3</td>
</tr>
<tr>
<td>1961</td>
<td>33.9</td>
<td>42.9</td>
</tr>
<tr>
<td>1960</td>
<td>36.2</td>
<td>45.2</td>
</tr>
<tr>
<td>1959</td>
<td>36.0</td>
<td>45.9</td>
</tr>
<tr>
<td>1958</td>
<td>35.8</td>
<td>45.7</td>
</tr>
<tr>
<td>1957</td>
<td>36.2</td>
<td>44.6</td>
</tr>
<tr>
<td>1955</td>
<td>39.2</td>
<td>48.4</td>
</tr>
<tr>
<td>1954</td>
<td>40.4</td>
<td>49.8</td>
</tr>
<tr>
<td>1950</td>
<td>38.9</td>
<td>50.9</td>
</tr>
<tr>
<td>1949</td>
<td>40.9</td>
<td>53.6</td>
</tr>
</tbody>
</table>


Criticism of Published Data

An important qualification must be made with respect to the previous discussion of seller concentration. Tables 5 and 6 implicitly assume that all HHG carriers are competing in the same geographic market; in particular, that all are competing on a nationwide basis. Actually competition takes place on three levels: national,
regional, and local. As of 1971 there were only 24 HHG carriers holding operating authority broad enough to be considered nationwide. Another group of carriers, approximately 120 in number, could be classified as regional carriers. For present purposes, a regional carrier is one that has at least one of the following: (1) an irregular-route non-radial certificate covering at least one state or (2) an irregular-route radial certificate with a hub at least as large as one state. Willis Day Moving and Storage Co. of Toledo, for example, holds a non-radial certificate permitting shipments between any points in Ohio, Dela., Ill., Ind., Md., Mich., N.J., N.Y., Pa., and D.C. Kings Van and Storage of Oklahoma City holds a radial certificate permitting shipments between points in Okla., Tex., Kan., and Ill. on the one hand, and on the other points in Ala., Ark., Colo., Ga., Fla., Ind., Ia., Ky., La., lower Mich., Miss., Mo., Nebr., N.M., N.C., Ohio, S.C., Tenn., and Wisc. The geographic distribution of regional carriers is given in Table 7. The remaining 2000+ HHG carriers typically have radial certificates for particular local market areas. A representative certificate is that of Penn Trf. & Stg. of Columbus, Ohio which permits shipments between points in Columbus and a 50 mile radius on the one hand, and on the other, points in Ind., and
The variation in the geographic scope of operations authorized by the ICC provides an explanation for the vast range in firm size evident in Table 5. In addition, it now becomes apparent that the largest carriers with nationwide authority face much less competition on long hauls than on short hauls i.e. the concentration ratios of Table 5 understate the importance of such carriers in the long haul markets. As an illustration, assume that a shipment is to originate in Boston and is destined for either New York City, Pittsburgh, St. Louis, Denver, Pa.  

2Classification of carriers as national, regional, or local is based on operating certificate descriptions in Household Goods Carriers' Bureau, Participating Carrier and Scope Tariff, Arlington, Virginia, 1971, pp. 18-135 and Movers' and Warehousemen's Association of America, Participating Carrier and Scope Tariff, Washington, D.C., 1971, pp. 4-83.
or Los Angeles (cities being listed in order of increasing distance from Boston). Of those carriers advertising in the Boston telephone directory, the number authorized by the ICC to serve each city respectively is 77, 51, 25, 22, and 20.3

Another qualification must be made concerning the method used in deriving the industry revenue figure on which Table 5 is based. As previously indicated, principal carriers use agents to solicit shipments in local communities. The agents receive booking commissions for this service to their principal. In addition, the principals often subcontract the actual hauling of household goods to some of their agents. Agents earn hauling commissions for this service.

Who are the agents who receive booking and hauling commissions? In some cases they are HHG carriers themselves with operating authority granted by the ICC. In a case before the Commission in 1957, Atlas VL indicated that of its 144 agents, 72 had operating certificates under their own names.4 For local carriers, as previously defined, Table 8 gives an indication of the extent to which such carriers serve as agents.

3Ibid., and the Boston Telephone Directory.
### Table 8

**AGENCY STATUS OF HOUSEHOLD GOODS CARRIERS HOLDING OPERATING CERTIFICATES FOR VARIOUS LOCAL MARKETS**

<table>
<thead>
<tr>
<th>City</th>
<th>Number of Local ICC Certified HHG Carriers Advertising in Telephone Directory (2)</th>
<th>Number in (2) Serving as Agents (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>55</td>
<td>21</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>61</td>
<td>16</td>
</tr>
<tr>
<td>Washington D.C.</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>Cleveland</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Chicago</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>St. Louis</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>


Even some of the regional carriers of Table 7 serve as agents for the nationwide carriers. United Moving and Storage, for example, serves as an agent of Atlas VL in Cleveland. United was the 61st largest intercity HHG carrier in 1971.⁵

Consider the carrier who holds operating authority from the ICC and also serves as an agent for a larger carrier. If the agent books and hauls a shipment for its principal, the customer will pay the principal

initially. The principal will record this payment as an increase in freight revenue (account 3100) as prescribed by the ICC in its uniform system of accounting. The principal will then record, as an expense, the booking commission of the agent under account 4360—"Commission Agent Fees." The hauling commission will also be recorded as an expense under account 4273—"Other Purchased Transportation."

The agent, in turn, will record the booking commission from the principal as an increase in "Other Operating Revenue" (account 3900, 390, and other operating revenue if the agent is a Class I, II, or III carrier respectively). The agent will also record the hauling commission as an increase in revenue ("Intercity Transportation for Other Class I and Class II Motor Carriers"—accounts 3130 and 313 if the agent is a Class I or II carrier respectively; or as "Other Operating Revenue" if the agent is a Class III carrier).

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7In 1973, the classes were defined as follows: Class I—carriers with average annual revenues of $1 million or greater; Class II—carriers with average annual revenues of $300,000 but less than $1 million; Class III—carriers with average annual revenues of less than $300,000.
The effect of the above described accounting procedure is that the hauling and booking commission component of the customer's payment will be counted once as revenue for the principal and then again as revenue for the agent. If the Commission determines industry revenue by simply summing the total revenue figures for each certified carrier, there will be a certain amount of double counting of revenue to the extent that some certified carriers are receiving booking and hauling commissions in their role as agents for other certified carriers.

A simple check indicates that the ICC does not avoid double counting in its derivation of total industry revenue. This can be shown by demonstrating that (1) the ICC counts all revenues of the principal carriers even though some of those revenues are actually paid out as booking and hauling commissions to other interstate HHG carriers and (2) the ICC then fails to subtract out that revenue received as hauling and booking commissions by other interstate HHG carriers who serve as agents to the principals.

That the ICC counts all revenues of the principal carriers can be shown with the following example. For 1964, the seven largest carriers had revenues
totaling $240.0 million. Since these seven carriers are known to rely heavily on their extensive agency systems, the $240.0 million figure does include revenues which were actually paid out as booking and hauling commissions to other interstate carriers. When the ICC derived the total industry revenue figure of $586.6 million (see Table 2) for 1964 it did include the full $240.0 million for the seven largest carriers. This is because Table 5, based on ICC data, indicates that the seven largest carriers had 40.92% of total industry revenue and 40.92% of $586.6 million is $240.0 million. What is eventually paid out as booking and hauling commissions by principals to other interstate carriers is included by the ICC in its derivation of an industry revenue figure.

To avoid double counting then the ICC would have to subtract out hauling and booking commissions from the revenue figures of other interstate carriers who serve as agents. This is not possible however. Those Class III carriers who are agents, for example, record both booking and hauling commissions in the

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account "other operating revenue." This account, however, also includes revenue from temporary storage of freight, vending machine income, profit on sale of materials and supplies, etc. This makes it impossible for the ICC to subtract out booking and hauling commissions in an effort to avoid double counting.

The ICC's failure to consolidate the revenues of principals and agents with their own operating authority was also pointed out in 1957 in a study made by Walter Adams and James B. Hendry of concentration levels among HHG carriers. Adams and Hendry concluded that the effect of the ICC's double counting is that "concentration ratios based on commission data understate the pervasive influence of national van lines." In addition to making small carrier-agents appear more important than they are as independent carriers, double counting also results in an overstatement of total industry revenue.

9 Motor Carrier Annual Report Form C, p.4.

Unfortunately, the data is not available to determine the seriousness of the double counting problem. There is reason to believe, however, that the double counting does not produce grossly inaccurate industry revenue or concentration figures. This is because many categories of shipments would not involve double counting. These include:

(1) shipments which are booked and hauled by the principal itself using its own employees and equipment
(2) shipments which are booked and/or hauled for principals by those agents who do not have interstate operating authority and thus are not regulated by the ICC
(3) shipments which are hauled for principals by independent owner-operators; individuals not required to file annual reports with the Commission
(4) shipments which are booked and hauled by carriers under their own operating authority and who are neither principals or agents

**Condition of Entry**

**Entry Barriers in the Absence of Regulation**

The existence of economies of scale can serve as an entry barrier in an industry. If there are large scale economies, a small scale entrant would be put at a competitive disadvantage, but on the other hand, demand may not be adequate for large scale entry by several firms. It was argued in Chapter II that there are no economies of scale in the actual hauling of HHG. One would expect, and there does

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11 This would be the most important category.
exist, a large number of small scale firms (and even individual van operators) providing transportation service to HHG shippers with the aid of central dispatchers. It was also argued, however, that there are economies of scale in matching booked shipments with available vans. If such economies are substantial, an entry barrier would be created for this aspect of HHG carrier operations. In addition, there are threshold costs associated with establishing a network of agents and dispatching facilities although even the investment required to enter as a nationwide carrier would be small in comparison to other transportation firms such as railroads, trunkline air carriers and transcontinental motor carriers of general freight.

Entry barriers can also exist if established firms have an absolute cost advantage or product differentiation advantages over potential entrants. For HHG carriers, though, there are no special resources employed by established firms which are not also available to potential entrants. Also, given the widespread public criticism of HHG carrier service performance (whether justified or not), it is not clear that consumers definitely prefer existing carriers to potential entrants. There may be some allegiance to existing brand names by national and
military account customers but brand loyalty would seem difficult to develop among private account customers because of the infrequent nature of their purchases.

Entry and Expansion Under ICC Regulation

The most significant determinant of the condition of entry for HHG carriers is regulation itself. Since each carrier must hold a certificate of public convenience and necessity issued by the ICC, the Commission has direct control over the number of interstate HHG carriers. A potential entrant must purchase an operating certificate from an existing carrier or must obtain a new certificate from the ICC. In the latter case the applicant must prove that he is fit, willing, and able to perform the proposed service and that the proposed service is required by present or future public convenience and necessity. The legal expenses themselves which are incurred because of these requirements have raised the cost of entry for applicants.

In practice, the ICC has adopted the following guideline in motor carrier certificate application

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12 Entry via certificate acquisition, of course, does not increase the number of competitors.

We have repeatedly stated that existing carriers normally should be accorded an opportunity to transport all of the traffic they can handle in an adequate and efficient manner without the added competition of a new operation. As a result, applications have been denied on numerous occasions because the ICC held that the service of existing carriers was adequate or could become adequate. The ICC has also denied applications on the ground that the proposed service would divert traffic from existing carriers. The ICC has even held that evidence that an applicant would offer service at lower rates than those of existing carriers was inadmissible as irrelevant.

Approximately 89,000 applications for certificates were filed by all types of motor carriers under the grandfather provision of the Motor Carrier Act. Even these applications however were not automatically approved. Applicants had to prove that they had been in "bona fide operation" on and since the original grandfather date of June 1, 1935. Overall, only about 30% of the grandfather applications were approved. Over 4000 HHG carriers were able to obtain their certificates

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under the grandfather clause.\textsuperscript{16}

In 1939 there were an estimated 4500 HHG carriers licensed by the ICC (see Table 4). Despite growing demand as indicated in Table 2, that number has dwindled to the ICC estimate of 2523 in 1973. Overall, the number of intercity motor carriers of all types fell from more than 26,000 in 1940 to 15,138 in 1972.\textsuperscript{17} These figures imply that the rate of exit and, what has been more important, merger activity have not been offset by ICC grants of new operating authority. This is in spite of the fact that more than 5,000 applications for certificates are filed each year by motor carriers, water carriers, and freight forwarders (the latter two being only a very small proportion of the total).\textsuperscript{18}

An indication of the ICC's restrictive entry policy can be given by tracing the origin of the 24 nationwide HHG carriers. These carriers entered the industry in one of three ways: (1) as the result of an


original grandfather application, (2) by purchasing operating certificates from existing carriers who themselves were mostly grandfather carriers, or (3) as a product of the merger of existing grandfather carriers. Thus, the group of nationwide carriers does not include any who in recent years entered the industry with an initial large grant of operating authority from the ICC.

Not only can the ICC restrict the number of competitors; it also assigns each competitor to a specific market area. When new certificates are issued, the ICC under Section 208 of the Motor Carrier Act is authorized to specify the nature of the service (regular or irregular route, radial or non-radial, etc.) and the geographic area in which the carrier is permitted to operate. The result for HHG carriers has been that most outstanding certificates are unique in terms of the nature of operations authorized. In effect the ICC has carved out grants of authority to each carrier in a manner that attempts to minimize competition in any particular area. In the words of the Commission:

From the beginning of federal motor carrier regulation, restrictions (on operating certificates) generally have been imposed to protect already authorized carriers from unintended or unwarranted competition. 19

The certificates that are granted to new HHG entrants then tend to be of the small radial type.

When an existing HHG carrier seeks to extend its operations beyond the geographic limits of its present operating certificate, it must seek an additional grant of operating authority from the ICC. As in the case of de novo applications, the ICC presumes that the service of existing carriers is adequate and the applicant must therefore prove otherwise with witnesses, surveys, etc. The ICC is particularly concerned that an extension may represent encroachment into other carriers' market areas i.e. applications are likely to be denied if it is found that traffic would be diverted from existing carriers. 20

How restrictive has the ICC been in the granting of certificate extensions to existing HHG carriers? The experience of the 24 nationwide carriers again provides an interesting case study. From the 1940's to 1969 there were only four HHG carriers (Aero, Allied, North American, and United) holding nationwide unrestricted non-radial operating authority. Between the 1940's and 1965 the ICC made only 7 grants of additional authority to the other twenty carriers who would

eventually achieve nationwide status. Since 1965 however, 18 additional certificate extensions have been granted to the 20 carriers. Included in the 18 are 10 extensions (since 1969) which have resulted in nationwide non-radial authority for the carriers involved. It would appear as though the ICC in recent years has become much less reluctant to permit expanding carriers to encroach on the market areas of others.

An examination of the recent 8 certificate extension cases not involving nationwide grants provides a common rationale for the ICC's behavior. The typical case involved a large carrier serving the eastern states who was applying for a west coast extension so that transcontinental service could be offered.\(^\text{21}\) In each case the eastern carrier was already competing with the single line service of Aero, Allied, North American, and United through interline arrangements with a west coast carrier. Such interline arrangements were proving unsatisfactory however for various reasons. In one case, the west coast carrier terminated its interline arrangement because it had purchased its own operating authority. In some cases the eastern carriers could not find west coast interline partners since there are many more

eastern carriers than west coast carriers. The ICC granted extensions in these cases declaring that:

Where the deterioration of (interlining) service (is threatened) with respect to points . . . for which a need has been established by . . . substantial (joint line) use on the part of the Public for a number of years . . . authority should be granted. . . . \(^{22}\)

In such cases the primary concern of the ICC was that, if the extension was denied, the eastern carrier would suffer serious financial harm. The ICC made it clear, however, to the existing single line carriers that their traffic would not be diverted because (1) the traffic in question was already being handled by interline arrangements and (2) since the industry was growing, everyone would receive more traffic. In extension cases of this type then the ICC was forced to perform a difficult balancing act in an effort to appease various segments of the industry.

In 1969, Fernstrom Storage and Van Co. received a certificate extension which resulted in nationwide non-radial operating authority.\(^{23}\) This was the first nationwide grant since the 1940's. With the Fernstrom approval, several other carriers quickly applied for

\(^{22}\)Ibid., p. 64.

nationwide extensions. By the end of 1972, the ICC had made 9 such additional grants: American Red Ball, Burnham, Global, King, Lyon, National, Neptune, Trans-American, and Wheaton. Can these extensions be rationalized in terms of producer protection or was the ICC making concessions to consumer interests?

During the late 1960's, the ICC was receiving an increasing number of complaints about the poor performance of HHG carriers. Complaints were registered by individuals, national accounts (i.e. large businesses), and the DOD. These complaints were verified by the ICC in its own survey which found that in some cases (1) estimates of charges were inaccurate, (2) promised pickup and delivery dates were not met and (3) shipments were lost or damaged. Public ire was further stirred up by publications such as Consumer Reports and a Ralph Nader research group report all of which were highly critical of HHG carriers and the ICC.

Stigler has argued that "as a rule, regulation is acquired by (an) industry and is designed and operated primarily for its benefit." He goes on to argue

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though that a regulatory process, being political in nature, must admit powerful outsiders to industry councils. If consumers, for example, become organized or highly vocal a commission must act to appease them since its operating funds must come from those elected to Congress. Apparently this is what happened in the case of nationwide HHG extensions by the ICC.

The Commission moved on two fronts to reduce consumer complaints. Declaring that it cannot remain insensitive to the complaints practices by HHG carriers have generated, the ICC laid down a set of rules in 1970 to give greater protection to shippers. The rules dealt with late pickups and deliveries, reweighing of shipments, the handling of claims, etc. The Commission also declared that since the service of existing nationwide carriers was inadequate, nationwide extensions to other carriers were justified.

In its decisions with respect to nationwide extensions, the ICC tried to create the impression that the "grants do not herald an era of free entry into the field of transcontinental household goods


transportation. The lowering of barriers on a temporary basis, however, did increase the number of competitors in the nationwide market and it also left open the possibility that at some future date the ICC would be pressured into allowing more carriers to enter the market. This prospect of freer entry into a previously protected industry would in turn tend to reduce the return on investment realized by present owners or expected by potential entrants.

Carriers seeking to expand beyond the geographic limits of their present certificates can attempt to buy appropriate certificates from existing carriers. Although such purchases must be approved by the ICC under Section 5(2) or Section 212(b) of the Interstate Commerce Act, they occur much more frequently than grants of certificate extensions. In contrast to the 25 certificate extensions granted to the present nationwide carriers, these carriers have purchased more than 50 certificates from others since the 1940's. To the ICC, this type of expansion would not represent encroachment since the purchased certificates were already being operated by their previous holders. The effect of such purchases combined with a restrictive entry policy is

28 Ibid., p. 872.
to distribute growing industry revenue among a smaller number of firms.

**Household Goods Carriers and Agency Systems**

The Nature of Agency Systems

As argued at the beginning of Chapter II, the nonrepetitive nature of demand, the wide geographic dispersion of potential consumers, and the joint product nature of front hauls and back hauls led the larger HHG carriers to establish agents in local communities to solicit business. Such agency networks are tied together by central dispatchers who use telephone, telegraph, teletype and radio to match potential shipments with available van space in an effort to minimize empty vehicle miles and to keep vans fully loaded.

Table 9 shows that there are 46 carriers with at least 25 agents. These carriers account for at least 50% of industry revenue. Table 9 also shows a generally positive correlation between carrier-principals ranked by number of agents and ranked by total operating revenue. The most notable exceptions are Fernstrom and Neptune which have only 22 and 10 agents respectively although Fernstrom ranks 15th in size and Neptune 9th. This can be explained by the fact that 85% of Fernstrom's business comes from national accounts (i.e. large firms transferring employees between branch facilities) and
### Table 9

**INTERSTATE HOUSEHOLD GOODS CARRIER AGENCY SYSTEMS (1974)**

<table>
<thead>
<tr>
<th>Number of Agents</th>
<th>Name of Principal Carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-200</td>
<td>Andrews, Cartwright, Continental, Engel Brothers, Fogarty Brothers, Imperial (Weathers)<em>, King</em>(16), National*(18), Pan American (Dean)<em>, Paramount, Pyramid</em>, Rocky Ford, Security, U.S.<em>(19), Von der Ahe</em></td>
</tr>
<tr>
<td>201-300</td>
<td>American Red Ball*(13), Burnham*(11), Global*(7), Greyhound*(8), John F. Ivory*(17), Lyon*(10), Republic*(12), Wheaton*(14)</td>
</tr>
<tr>
<td>301-400</td>
<td>Atlas*(6)</td>
</tr>
<tr>
<td>401-500</td>
<td>Bekins*(5)</td>
</tr>
<tr>
<td>501-600</td>
<td>United*(4)</td>
</tr>
<tr>
<td>701-800</td>
<td>Aero Mayflower*(3), Allied*(1)</td>
</tr>
<tr>
<td>801-900</td>
<td>North American*(2)</td>
</tr>
</tbody>
</table>

**Note:** The asterick indicates that the carrier has nationwide or almost nationwide operating authority. Two other nationwide carriers not listed, Fernstrom and Neptune, have 22 and 10 agents respectively. The numbers in parentheses indicate the size ranking (in terms of total operating revenues) of the carriers for the 20 largest intercity HHG carriers in 1972. Fernstrom and Neptune were ranked 15th and 9th respectively.

**Source:** The size of agency systems is from the files of the Interstate Commerce Commission Bureau of Operations: Section of Motor Carriers, Household Goods Agency Unit, 1974. The ranking of the 20 largest HHG carriers is for 1972 and is from Movers Journal March 31, 1973, pp. 8-9.
Neptune likewise primarily handles national account traffic.\(^{29}\) In particular Neptune has offices in cities where IBM and Sperry Rand are located. Fewer agents are needed in such a situation as household goods tend to move over the same routes with a repetitive pattern.

Functions of principal carriers include the holding of operating rights, advertising, the handling of insurance and claims, pricing, and the distribution of revenues. Another routine activity is the matching of moving vans with shipments in an effort to minimize empty mileage and maximize load factors. In 1971 Allied, the largest carrier, had to monitor the use of an average of 5565 trucks and truck tractor-trailer combinations which were used to haul 502,000 tons of HHG (approximately 250,000 separate shipments).\(^{30}\) King Van Lines, a much smaller nationwide carrier, had only 328 power units in use on average and transported only 29,000 tons of HHG in 1971,\(^{31}\) but nevertheless makes use of a sophisticated centralized dispatching system in matching equipment with shipments.

King Van Lines has centralized dispatching from its general offices in Wichita. Its van operations are


\(^{30}\)TRINC's. 1972, p. 115.

\(^{31}\)Ibid., p. 124.
divided into four geographic regions, each headed by a regional traffic controller whose function it is to coordinate shipments and equipment. As an aid to the controllers:

King has a Computer Assisted Dispatch System which maximizes available information and facilitates efficient coordination of all involved factors. Information respecting shipments and equipment is received by the traffic department and recorded and stored in a Univac 4183 (located in Nashville, Tenn.). Shipments are recorded as soon as accepted and their disposition is thereafter updated each time their status changes. Information respecting each vehicle is received and recorded daily. All information recorded in the computer is then immediately available for retrieval by the traffic controller on cathode ray tube scopes located in the traffic control office in Wichita. By use of this system the traffic controller has immediate access to information necessary for quickly and accurately determining the most efficient and timely routing of each shipment, for determining and responding to requests for service, and for tracing and providing information respecting shipments.32

The Importance of Purchased Transportation

Agents solicit business for their principal carrier (for which they receive a booking commission of about 20% of the transportation charge), provide labor for loading and unloading HHG, and perform other accessor services such as packing or warehousing. Principal carriers also rely on their agents to perform much of the physical transportation of HHG. Four of

the 15 largest carriers, for example, own no trucks, truck tractors, or trailers at all. Agents who themselves are local, intrastate, or limited interstate HHG carriers represent a pool of drivers and equipment from which principal carriers can draw upon through lease agreements. Principals also lease drivers and trucks (usually on a longer term or permanent basis) from independent owner-operators. Hauling commissions are typically 65% of the total transportation revenue from a shipment.

The importance of subcontracting or "purchased transportation" for HHG carriers is indicated in Table 10 on the next page where the comparison is made with motor carriers of general freight. Purchased transportation represented 50.4% of total operating expenses for HHG carriers and only 8.8% for motor carriers of general freight. Since leasing of equipment is so important for HHG carriers this also helps explain the relatively lower HHG carrier percentages for equipment maintenance, depreciation and amortization, and taxes and licenses and the higher HHG carrier percentage for total transportation expense (62.3% vs. 45.3%). The terminal expense percentage is lower for HHG carriers because they do not engage in terminal operations of the

33TRINC's, 1971, pp. 115-131.
Table 10

SEPARATE EXPENSE CATEGORIES AS A PERCENT OF TOTAL OPERATING EXPENSES: CLASS I AND II MOTOR CARRIERS

<table>
<thead>
<tr>
<th>Expense Category</th>
<th>Intercity HHG Carriers</th>
<th>Intercity General Freight Carriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Maintenance</td>
<td>2.4%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Transportation</td>
<td>62.3%</td>
<td>45.3%</td>
</tr>
<tr>
<td>Purchased</td>
<td>50.4%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Other</td>
<td>11.4%</td>
<td>36.5%</td>
</tr>
<tr>
<td>Terminal</td>
<td>2.9%</td>
<td>21.2%</td>
</tr>
<tr>
<td>Traffic</td>
<td>14.9%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Insurance and Safety</td>
<td>4.8%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Administrative and General</td>
<td>9.3%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Depreciation and Amortization</td>
<td>1.5%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Taxes and Licenses</td>
<td>2.1%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note: Class I and II carriers are those with annual revenues averaging at least $300,000.

type generally associated with general freight carriers. For example, the counterpart of platform workers in the terminal account for general freight carriers would be helpers expense in the transportation account for HHG carriers. The traffic expense percentage is higher for HHG carriers because it includes such items as booking commissions paid to agents, a practice generally absent from the operations of general freight carriers.

Other data confirms the fact that subcontracting is relatively more important for HHG carriers. The ratio of rented truck miles to total truck miles for Class I and II HHG carriers was 93.3% in 1971. For Class I and II intercity general freight carriers, the ratio was only 29.6%.

Both HHG and general freight carriers have "permanent truck fleets" consisting of a combination of company equipment and drivers and contracts with independent owner-operators. In addition though, and by contrast, HHG carriers rely heavily on permanent and "intermittent" or "trip" leases of trucks and drivers from their agents. In a cost study performed by the Household Goods Carriers' Bureau on a sample of 16 large carriers, 1971 data indicates that purchased transportation from owner-operators and hauling agents was divided 27.9%.

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34 TRINC's, 1972, pp. S-3 and S-4.
and 72.1% respectively.\textsuperscript{35}

Not all of the larger HHG carriers subcontract to the extent indicated by the 50.4% figure of Table 10. The significant exceptions are Fernstrom Storage & Van Co. and Neptune World-Wide Moving where the ratio of purchased transportation to total operating expenses was 24.1% and 38.8% respectively.\textsuperscript{36} As explained earlier, however, these two carriers handle national account traffic primarily which allows regular route operations between a relatively small number of fixed terminal points in contrast to the irregular and non-repetitive shipments generally characterizing the traffic handled by HHG carriers. The small number of agents that each of these two carriers have are mainly branch sales offices, not independent agents who would have equipment and drivers available for lease to their principal. Fernstrom, for example, at the time it received its grant of nationwide operating authority had 17 branch sales offices and a small number of independent agents for military traffic only and who did just estimating, packing, pickup and local storage for their principal.\textsuperscript{37}


\textsuperscript{36}TRINC's, 1972, pp. 122 and 237.

For Fernstrom and Neptune then as for general freight carriers, purchased transportation consists primarily of contracting with independent owner-operators.

Why do the majority of the larger HHG carriers rely more heavily on leased vehicles than general freight carriers of comparable size? As indicated earlier, both make use of permanently leased vehicles obtained from independent owner-operators. HHG carriers, however, also lease vehicles on both a permanent and intermittent basis from their agents where the existence of agents with their pool of drivers and equipment has been argued to be a feature unique to HHG carrier operations. It remains to be explained why principals have an incentive to lease those vehicles and drivers which are available from agents.

Basically, principals have discovered that they can gain from (1) reducing the excess capacity held by agents in the form of empty back hauls, (2) increasing load factors on agents' front hauls, and (3) using agents' equipment to meet peak demand situations (which are not as evident for general freight carriers). Agents typically engage in some combination of local, intrastate, and limited interstate operations. Such intrastate and interstate operations are generally of a radial nature. Since these carrier-agents usually have no representation at destination points they face the prospect of empty back hauls. Penn Transfer and Storage Co. of Columbus, Ohio
for example, is authorized to haul shipments between the Columbus area on the one hand, and on the other, points in Indiana and Pennsylvania. With no representation in other cities, an outbound shipment from Columbus to Philadelphia, for example, would result in an empty van back to Columbus. To avoid such empty back hauls, Penn has become an agent of Lyon Van Lines. In the above described situation, Lyon's central dispatcher would attempt to arrange for a back haul for Penn through Lyon's agent in Philadelphia. If a shipment could be booked in the general direction of Columbus the Philadelphia agent would receive a booking commission of about 20% of the transportation charge. Lyon would then trip lease Penn's van and pay Penn a hauling commission of about 65%. Such arrangements reduce empty back hauls for carrier-agents and make it unnecessary for principals to provide their own trucks and drivers for the transport of such shipments. In addition, the principals receive about 15% for the service they provide in matching vans and shipments.

Through temporary leases principals can also take advantage of the excess capacity represented by partially filled vans on agents' front hauls. It is well known in the industry that there are economies in operating larger vans in line haul service. The larger more efficient multiple shipment vans are an advantage to carrier-agents if the vans can be kept fully loaded. Principals can
supplement the outbound shipments being hauled by agents on agents' accounts by adding shipments which are destined beyond the scope of the agent's operating authority. Again the agents trip lease their vans to their principal and are paid a hauling commission. Such arrangements increase the efficiency of equipment utilization of agents and reduce the cost that principals must incur for the provision of drivers and equipment. The principal once again receives about 15% for the service it provides.

As noted in Chapter II, HHG carriers are subject to substantial fluctuations in demand seasonally and on a day-to-day basis. Through the use of intermittent leases, principals can quickly augment their equipment during peak periods (which may not coincide with peaks for agents) and can avoid excess capacity during slack periods (which also may not coincide with off-peak periods for agents).

II. Market Conduct

Rate Setting

Rate Bureaus, ICC Regulations and Collusive Rate Making

In Chapter II it was argued that the regulatory framework within which HHG carriers operate could serve to facilitate collusive rate making. The specific provisions having that effect included: open pricing, penalties for secret price cutting, ICC power to suspend rates, ICC power to set minimum rates, suppression of
indirect price cuts achieved through service differentiation, and antitrust immunity for those engaged in group rate making.

With the passage of the Motor Carrier Act of 1935, independent rate making by HHG carriers gave way to price setting through rate bureaus. Today there are two major HHG rate bureaus: Household Goods Carriers' Bureau (HHGCB) which was formed in 1936 and the Movers and Warehousemen's Association of America (MWAA) also formed shortly after the passage of the Motor Carrier Act. In 1971, approximately 1500 interstate HHG carriers were members of the HHGCB and the MWAA had a membership of 600.\(^{38}\) Some other carriers belong to a small number of regional rate bureaus so that of the estimated 2400 HHG carriers in 1971, at least 2100 set rates collectively through bureaus which have been granted antitrust immunity.

An effort was made to determine if any of the largest HHG carriers are not members of industry rate bureaus, implying that they would file tariffs on an individual basis. Comparing the 1971 memberships of the HHGCB and the MWAA with TRINC's 1971 data on

\(^{38}\) Household Goods Carriers' Bureau, Participating Carrier and Scope Tariff, pp. 18-135 and Movers' and Warehousemen's Association of America, Inc., Participating Carrier and Scope Tariff, pp. 4-83.
operating revenues indicates that the 87 primarily intercity carriers with revenues exceeding $1 million are all members of either the HHGCB or the MWAA. These carriers account for well over one half of industry revenue and of course include the 24 nationwide carriers. Of the next largest 81 intercity carriers (revenue exceeding $500,000 but less than $1 million), only 3 are not listed as members of either the HHGCB or the MWAA. These 3 carriers however could still be members of regional bureaus or they might be agents of carriers who belong to bureaus in which case they are required to charge the same rates as their principals. In general then, HHG carriers involved in collective rate making do not have to contend with outsiders of any significant size.

The primary function of a rate bureau is to publish and file tariffs on behalf of its members although a bureau also provides educational services for its members and often represents their interests before the ICC. A rate bureau tariff contains several sections of rates. Using the HHGCB Tariff No. 143-A (1971) as an example, Section I lists rates for various additional services.
such as packing containers, packing and unpacking, bulky articles, storage in transit, extra insurance, and the inconvenience of using elevators or climbing many flights of stairs. Section II is the master tariff containing rates for loading, transporting, and unloading a shipment of HHG. Rates are stated in dollars per hundred weight increasing with distance (1-3800 miles) and decreasing with weight of shipment (500-16,000 plus pounds). Sections III, IV, and V of the tariff contain a progressively higher average level of rates for shipments originating in particular areas of the country and moving 500 miles or less. The purpose of these sections is to provide higher rates for short hauls from sections of the country that are more densely populated and have more congested highways, higher wage rates, and higher carrier costs than other areas. A comparison of sections II, III, IV and V for distances up to 500 miles reveals that the incidence of the progressively higher rates is on shortest haul-smallest shipment traffic. For example, the section V rate for a 12,000 pound shipment moving 500 miles is less than 1% higher than the section II rate. In contrast, the section V rate for a 1,000 pound shipment moving 50 miles is 64% higher than the section II rate.

An examination of HHGCB Tariff No. 143-B indicates that, depending upon whether section II, III, IV, or V
applies, generally speaking the rate bureau members are charging identical transportation rates. It is also true that the section I rates for additional services are uniform among HHGCB members. An examination of the MWAA Tariff No. 65(1971) reveals that transportation charges and charges for additional services are also uniform among MWAA members. Furthermore, a comparison of charges for additional services for the two rate bureaus and a comparison of HHGCB sections II, III, IV, V with the corresponding MWAA sections III, IV, V, VI respectively reveals that there is no difference in rates between the two rate bureaus.

It must be mentioned that there are some individual member exceptions to the rates set by the HHGCB and MWAA. As an example, Collins Moving and Storage Co. of Westerly R.I. as a member of the HHGCB does not subscribe to section IV rates; instead it uses the lower rates of section II or III. But, of the 2100 carriers who are members of either the HHGCB or MWAA, less than 50 have specific exceptions to the transportation charges set by the bureaus and those carriers involved are

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41 Household Goods Carriers' Bureau Agent Tariff No. 143-A, p. 4.
typically small and operating under limited radial certificates. It is also true that there are some individual carrier exceptions to the charges for additional services but again the number is small. Aside from the exceptions just noted, rate bureau participants have been able to achieve a high degree of uniformity in the rates charged for the transportation of HHG.

Although rate bureaus are a unique and outstanding feature of regulated transportation industries, it remains to be determined exactly what their economic significance is. It is generally accepted that there are economies in group publication and filing of tariffs particularly when all carriers desire to charge identical rates. Economies are also likely to be realized by having a rate bureau represent its members in dockets before the ICC as opposed to the affected members each presenting their own case much of which would tend to be duplicative. An example of group action would be a rate bureau exercising its right of protest in a case involving proposed rate cuts by a carrier intent on independent rate making.

Aside from economies such as just described, the economic significance of rate bureaus per se would seem to be limited. Of particular interest is the limited ability of rate bureaus to enforce collusion among carriers. This is because (1) rate bureaus cannot
compel carriers in the industry to become members and (2) rate bureaus cannot force their members to charge identical rates.

The inability of the HHGCB to draw all HHG carriers into its organization quickly became apparent with the passage of the Motor Carrier Act in 1935. Although the vast majority of HHG carriers became members of the HHGCB, John F. Ivory Storage Co. (8th largest carrier in 1947) remained a notable outsider and several other smaller carriers formed a rival rate bureau which is now the MWAA. It is not known whether John F. Ivory attempted to cut rates below those of rate bureau members i.e. whether John F. Ivory was playing the role of the recalcitrant firm and thereby threatening the stability of a cartel situation. The rates of those belonging to the MWAA however are known to have been originally 25-30% below HHGCB rates. Since the members of the MWAA however were very small carriers, they may not have posed a significant threat to HHGCB members. The differential between HHGCB and MWAA rates gradually became smaller and in 1963 the HHGCB proposed to reduce rates about 4% which would have brought about rate equalization. Over the protest of the MWAA the U.S.

Supreme Court ruled in favor of the HHGCB's proposed reduction. One explanation of the eventual elimination of the rate differential between the two bureaus is that many of the MWAA members eventually became very large carriers (even nationwide) and thus their lower rates began to pose more of a threat to the HHGCB members. In effect, the HHGCB may have been forced by competition to allow the rate differential to be eliminated.

Rate bureaus cannot force their members to charge identical rates because members' right of independent action is protected by paragraph 6 of the Reed-Bulwinkle Act of 1948. In particular, paragraph 6 requires that the ICC shall not approve a rate bureau agreement:

... unless it finds that under the agreement there is accorded to each party the free and unrestrained right to take independent action either before or after any determination arrived at through such procedure.44

The insertion of this paragraph into an act designed to relieve rate bureaus of antitrust prosecution reflects a compromise reached after intense lobbying efforts.


by organized shipping interests such as the National Industrial Traffic League.\textsuperscript{45}

It has been argued by George Hilton that paragraph 6 emasculates the effectiveness of the Reed-Bulwinkle Act as a cartelization device.\textsuperscript{46} In practice, attempts have been made to evade the intent of paragraph 6 in an effort to achieve rate uniformity among bureau members. The HHGCB rate agreement, for example, does allow for independent action in the setting of rates and was approved by the ICC in 1950. But the bylaws of the rate bureau do contain provisions which attempt to discourage individual initiative in submitting rates. First, the cost of publishing and filing a rate change or a tariff for an individual carrier is borne entirely by that carrier in contrast to the costs associated with the general tariff which is covered by membership dues. Secondly, if a member were to direct the bureau to change a rate for its sole account, the bylaws state that notification of the proposed change will immediately be sent to all members affected by that change and they are then afforded the opportunity to


\textsuperscript{46}Ibid., p. 1218.
match the change. It appears then that the aim of these provisions is to raise the cost and reduce the expected benefits of independent action in setting rates.

If all carriers were forced to become members of rate bureaus, the bylaw provisions described above could be effective in promoting rate uniformity. But, as has already been pointed out, rate bureaus cannot compel carriers to become members. Thus, with members having the alternative of leaving the rate bureau, it is doubtful that the provisions per se would be effective in discouraging competitive rate cuts by individual members.

Basically what the motor carrier rate bureaus lack as effective cartelization devices is machinery to enforce collusion or as Meyer and his associates state:

Even the rate bureaus in the trucking industry ... cannot unaided insure the joint action of their members, but require assistance from the enforcement machinery of the ICC.

The problem is that in a market with a large number of sellers, the temptation to cut price when marginal revenue exceeds marginal cost becomes irresistible from an individual seller's point of view. In the case of


motor carriers the needed enforcement machinery came with the passage of the Motor Carrier Act of 1935 with its provisions for open pricing, the setting of minimum rates, and the suspension of rates.

Open pricing and penalties for non-adherence to tariffs tended to promote rate uniformity in the trucking industry. As the ICC observed in a rate case involving motor carriers of general freight:

Prior to the effective date of the Motor Carrier Act, 1935, rates were made by individual carriers, at will, on the basis demanded by the particular competitive situation. There was no stability in the rates and the public generally had no means of knowing the rates being charged. When the initial filing of tariffs was made, effective April 1, 1936, as required by the act, numerous discrepancies, inequalities, and inconsistencies appeared in the rates published, and for the first time each carrier learned of the rates being charged by its competitors. The effect of such publicity was a general reduction to the level of the lowest rate maintained by any competitor.49

It might be noted at this point that HHG carrier rate bureaus (and other motor carrier rate bureaus) were formed after, not prior to, the passage of the Motor Carrier Act despite the fact that the legislation had no effect on the legal status of rate bureaus. This suggests that the tendency toward rate uniformity was probably the cause, not the result of the formation of

rate bureaus.

As explained in Section III of Chapter II, with the passage of the Motor Carrier Act the ICC was given the power to set maximum or minimum rates if previous rates were held to be unlawful. The ICC was quickly called upon by the trucking industry to exercise its power to set minimum rates. Rate bureaus could not halt the downward spiral of rates that resulted from open pricing. The typical situation involved a rate bureau attempting to establish a uniform higher level of rates for its members. The bureau would then have to contend with non-members who would undercut the bureau rates and take traffic away from bureau members. As the ICC stated in one case:

Any attempt on the part of the Bureau to establish uniform rates between competitive points is frustrated by the action of nonmember carriers that continually cut rates in the hope of gaining a larger share of the competitive traffic. 50

In some cases the rate bureaus were frustrated by some of their own members who would refuse to go along with the higher rates.

The ICC did in fact exercise its power to set minimum rates. In five major cases published by the ICC between 1937 and 1941 concerning motor carriers of general freight, the Commission established minimum

50 Ibid., p. 237.
rates on a territory wide basis and affecting all carriers in the given territory.\footnote{1} It is not known whether the ICC exercised its minimum rate powers in such a manner with respect to HHG carriers in particular. In each of the five major cases, the ICC held that:

> It is necessary for us to exercise our power to fix minimum rates, so that a limit may be set to destructive competition.\footnote{2}

Even in recent years much of the ICC's rate caseload involves minimum rate cases. In 1962, 173,248 rail, motor, and water tariffs were filed with the ICC. The ICC suspension Board considered 5,170 of the total number and 95% of these involved rate decreases.\footnote{3}

In another study, David Maxwell examined the 176 motor carrier rate cases printed in full in Motor Carrier Cases for a one year period.\footnote{4} In 135 of these

\footnote{1} "Rates Over Freight Forwarders, Incorporated," 4 MCC 68 (1937); "Central Territory Motor Carrier Rates," 8 MCC 233 (1938); "New England Motor Carrier Rates," 8 MCC 287 (1938); "Trunkline Territory Motor Carrier Rates," 24 MCC 501 (1940); "Midwestern Motor Carrier Rates," 27 MCC 297 (1941).

\footnote{2} "New England Motor Carrier Rates," p. 329.


cases, the ICC had suspended the proposed rate change. Most importantly, 133 of the suspensions involved proposed rate reductions. The suspensions in these later cases had been made following protests filed by rate bureaus and competing carriers. In 91 of the 133 suspended rate reductions, the ICC agreed with the protestants that the rate decrease should not be allowed ruling for example that the proposed rate was not compensatory or that the lower rate would divert traffic from other motor and rail carriers. Even in the 42 cases where the lower rates were eventually approved the ICC's behavior was not necessarily inconsistent with the desire to maintain cartel stability. In some of the cases, for example, motor carrier rate reductions were found necessary to meet competition from outsiders such as railroads and private truckers. From his study Maxwell concluded:

One major function of the Commission is thus to reinforce the control of motor-carrier cartels over their members, though the Commission may view this role as that of stabilizing the rate structure or preventing its demoralization by forcing observance by all carriers of the tariff determined jointly by them and by discouraging the attempts of individual carriers to charge lower rates.55

In summarizing this section on rate setting, it should be emphasized that the evidence shows motor carriers of HHG to have achieved a high degree of rate uniformity. Superficially it would appear as though the

55Ibid., p. 79.
uniform rates have been achieved by centralized price fixing through industry rate bureaus operating with antitrust immunity. Rate bureaus however have been successful primarily because they can rely upon legal machinery for enforcing collusion. This machinery was put in place with the passage of the Motor Carrier Act of 1935. The evidence for motor carriers in general also indicates that the ICC has administered the rate regulations of the Motor Carrier Act in such a manner as to protect its regulatees from the rigors of rate competition.

Rate Making on Shipments for the Military

In Chapter II it was argued that the recent grants of nationwide extensions of operating authority by the ICC were made to appease consumer interests. This behavior was held to be consistent with Stigler's theory of regulation in which he argues that the same conditions which favor the acquisition of protective regulation by an industry are also favorable to various adversary groups. In general then effective adversaries may be able to partially or completely block an industry's attempt to acquire protective regulation.

In the case of motor carriers of HHG, the Department of Defense is an adversary party with what must be considered significant political clout. In addition,
the DOD is the single largest shipper of household goods. Industry sources have estimated that shipments for the military account for approximately 1/3 of all interstate HHG shipments.\(^{56}\) The ICC has estimated the figure at 36.7%.\(^{57}\) Thus, the DOD may well possess both political power and some degree of monopsony buying power.

The effectiveness of the DOD as an adversary force with respect to HHG carriers is best represented by its ability to preserve Section 22 of the Interstate Commerce Act. Under Section 22, any ICC regulated carrier may deviate from its lawfully published tariff on file at the ICC and transport property and persons for federal, state, and local governments free or at reduced rates.

Apparently the insertion of Section 22 into the original Interstate Commerce Act of 1887 occurred without notable comment or controversy.\(^{58}\) Although under the old rules of statutory construction the government would not be subject to the provisions of a statute not making specific reference to it, the legislators apparently decided that the exemption should be made explicit.

\(^{56}\) Estimate made by the American Movers Conference in a letter dated October 15, 1972.

\(^{57}\) Etkin, op. cit., p. 5.

Part of their motivation was to provide for a lawful method of extending the rate concessions which had been granted to the government by the land-grant railroads for many years prior to passage of the Interstate Commerce Act.\(^59\)

The lack of controversy surrounding the inclusion of Section 22 in the original act probably reflects (1) the fact that in 1887 the government was a comparatively small shipper and a small user of the passenger services of the regulated carriers and (2) the government traffic that was handled and moved over land-grant lines already enjoyed rate concessions of 50% off tariff rates.\(^60\) Neither of these conditions however would continue to hold. During World War II the federal government became the single largest customer and has maintained that position since. In addition the land-grant statute was repealed in 1946 leaving Section 22 as the main vehicle through which government can obtain reduced rates.

The effect of Section 22 is to prevent the ICC from exercising its rate regulation powers (in particular, its suspension and minimum rate powers) with respect to

\(^{59}\)Ibid., p. 326.

the previously described traffic. In the case of HHG carriers, Section 22 leaves the DOD free to employ its bargaining strength to affect the rates set by the carriers. Carriers however cannot be forced to transport government traffic free or at reduced rates. Thus, one would expect the DOD to lobby to preserve Section 22 only if it possessed sufficient buying power in the market to push military rates below regular tariff rates.

The DOD has in fact fought to keep Section 22 intact while HHG carriers in particular have attempted to have it repealed. The loudest debate over the issue probably took place during the 1950's when military HHG shipments were being awarded on the basis of competitive bids. In 1957, for example HHG carriers made an unsuccessful attempt to have Section 22 repealed. Specifically, an amendment was introduced in the House of Representatives to exempt HHG carriers from the provisions of Section 22. The bill had been introduced at the urging of the Movers' Conference of America, an organization representing approximately 4,000 HHG carriers. The primary support for the bill however came from 3 or 4 of the largest carriers in the Conference who accounted for 80% of

the Federal Government shipments. The Movers' Conference argued that:

The use of Section 22 quotations for the movement of household goods has led to a chaotic condition in the moving industry characterized by depressed rates, destructive competitive practices, and inferior quality of service rendered to the Government and its personnel.

The DOD opposed the amendment arguing that its passage would increase the costs of shipping HHG. It was estimated in 1952 that had the military shipments moved at regular tariff rates, the increased cost to the DOD would be $10.8 million per year. This figure represented approximately 10% of total industry revenue at that time, not an inconsequential sum.

Direct evidence indicates that the DOD did possess the market power required to push military rates below regular tariff rates. The rate comparison shown in Table 11 on the next page was presented at hearings before the Committee on Interstate and Foreign Commerce of the U.S. Senate in 1952. HHG carriers had to submit bids at least as low as the rates indicated in the second column to be awarded military traffic. The last two columns of the table indicate the extent to which military

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64 Ibid., p. 8.
Table 11

RATES PER HUNDREDWEIGHT ON HOUSEHOLD GOODS SHIPMENTS
WEIGHING 4000 TO 8000 POUNDS (1951)

<table>
<thead>
<tr>
<th>Miles (1)</th>
<th>Prevailing Military Rates (2)</th>
<th>Independent Movers and Warehousemen's Tariff No. 8&lt;sup&gt;a&lt;/sup&gt; Effective 1951 (3)</th>
<th>Household Goods Carriers' Bureau Tariff No. 42-&lt;sup&gt;b&lt;/sup&gt; Effective 1951 (4)</th>
<th>Percentage Reduction Column (2) Compared to Column (3) (5)</th>
<th>Percentage Reduction Column (2) Compared to Column (4) (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>$1.16</td>
<td>$1.65</td>
<td>$1.70</td>
<td>42.2%</td>
<td>46.5%</td>
</tr>
<tr>
<td>100</td>
<td>1.70</td>
<td>2.30</td>
<td>2.35</td>
<td>35.3</td>
<td>38.2</td>
</tr>
<tr>
<td>200</td>
<td>2.65</td>
<td>3.00</td>
<td>3.10</td>
<td>13.2</td>
<td>17.0</td>
</tr>
<tr>
<td>500</td>
<td>4.70</td>
<td>4.90</td>
<td>5.15</td>
<td>4.3</td>
<td>9.6</td>
</tr>
<tr>
<td>1000</td>
<td>7.10</td>
<td>7.50</td>
<td>7.95</td>
<td>5.6</td>
<td>12.0</td>
</tr>
<tr>
<td>1500</td>
<td>8.70</td>
<td>9.70</td>
<td>10.45</td>
<td>11.5</td>
<td>20.1</td>
</tr>
<tr>
<td>2000</td>
<td>10.20</td>
<td>11.90</td>
<td>12.90</td>
<td>16.7</td>
<td>26.5</td>
</tr>
</tbody>
</table>

<sup>a</sup> Almost 400 carriers participated in Tariff No. 8.

<sup>b</sup> Over 2200 carriers participated in Tariff No. 42-A.

Source: U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Bills Relative To Domestic Land and Water Transportation on S. 2653, 82d Cong., 2d sess., 1952, p. 1231.
rates were below the regular tariff rates of the two major rate bureaus. Apparently the DOD has been able to take advantage of Section 22.

In an attempt to update the results of Table 11, the currently applicable military and regular tariffs were obtained for comparison. Military rates are at present set at a negotiated uniform level among carriers. At each military installation, traffic is distributed on an equal tonnage basis among carriers who have met certain financial and service qualifications.

To keep the comparison to manageable proportions, rates were compared for only the most important (in terms of revenues generated) weight brackets and mileage blocks. The 4000-7999 lb. and 8000-11999 lb. weight brackets were considered along with lengths of haul up to 1500 miles. In Part A of Table 12f Section III of the military tariff is compared to Section II of the regular tariff. These are the two master tariff sections of the respective tariffs and they apply to all

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Table 12
PERCENTAGE REDUCTION OF TOTAL MILITARY TRANSPORTATION RATES FROM TOTAL REGULAR TRANSPORTATION RATES

Part A
Section II Regular Tariff vs. Section III Military Tariff

<table>
<thead>
<tr>
<th>Selected Lengths of Haul (Miles)</th>
<th>Selected Shipment Weightsa (Pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4000</td>
</tr>
<tr>
<td>200</td>
<td>1.8%</td>
</tr>
<tr>
<td>500</td>
<td>4.4</td>
</tr>
<tr>
<td>1200</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Part B
Section III Regular Tariff vs. Section IV Military Tariff

<table>
<thead>
<tr>
<th></th>
<th>200</th>
<th>500</th>
<th>200</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.6</td>
<td>4.4</td>
<td>6.0</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td>4.2</td>
<td>4.7</td>
<td>5.0</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Part C
Section IV Regular Tariff vs. Section IV Military Tariff

<table>
<thead>
<tr>
<th></th>
<th>200</th>
<th>500</th>
<th>200</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.1</td>
<td>4.4</td>
<td>11.1</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>9.5</td>
<td>4.7</td>
<td>10.2</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Part D
Section V Regular Tariff vs. Section IV Military Tariff

<table>
<thead>
<tr>
<th></th>
<th>200</th>
<th>500</th>
<th>200</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.4</td>
<td>4.4</td>
<td>19.5</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>18.0</td>
<td>5.9</td>
<td>18.0</td>
<td>8.0</td>
</tr>
</tbody>
</table>
Table 12-Continued

aSelected shipment weights represent the minimum and maximum weights contained in the following distinct weight brackets: 4000-7999 pounds and 8000-11999 pounds.

shipments moving less than 500 miles with certain exceptions to be discussed.

For military shipments moving less than 500 miles and originating in the more congested areas of the country, the higher rates of Section IV apply. This would include most points of origination in the following areas: the 19 states east of the Mississippi River and north of Tennessee and North Carolina plus the District of Columbia and Minn., Ia., Mo., Neb., Kan., and Colo.

For civilian shipments moving less than 500 miles and originating in the same area as just described, the progressively higher rates of Section III, IV, and V would apply. Using Illinois as an example non-military shipments originating in the Chicago, East St. Louis, and Peoria areas would move at Section V, IV, and III respectively. Thus, in Parts B, C, and D of the table, the less than 500 mile section of the military tariff is compared to the progressively higher less than 500 mile sections of the regular tariff.

As Table 12 indicates, military rates are less for all of the shipment weights and distances considered. For shipments moving 500 miles or more, the military rates are 4.4 - 8.0% less than the regular rates. For shipments moving less than 500 miles, namely the 200 mile case, the range is much greater: 1.8 - 19.5%. This wider range is due to the greater rate variation by
point of origination for shipments moving less than 500 miles. Since the important military installations tend to be located in less urbanized areas, however, the 200 mile rate comparison of Parts A and B are probably more appropriate than those of Parts C and D. This suggests that the actual percentage reduction figure probably lies closer to 1.8% than to 19.5%.

That the reduced military rates determined above would be expected to have a significant adverse impact on HHG carrier profits is suggested by the comparison made in Table 13 on the next page. For convenience, Part A of Table 12 is repeated in the top half of Table 13 and shows the discounts that military rates represent from the master section of the regular tariff. In the bottom half of the table, the profit margins on non-military shipments of comparable weight and distance are shown as estimated by the Household Goods Carriers' Bureau in a recent cost study using 1971 data. Since the profit margins were based on revenues generated under Section II of the regular tariff, Part A of Table 12 was chosen as most appropriate for the comparison to be made.

Table 13, for example, shows that profit as a percent of shipment revenue is estimated to be 8% in the weight bracket 4000-7999 lbs. and the mileage block 0-499 miles. For a comparable weight bracket and a
<table>
<thead>
<tr>
<th>Miles</th>
<th>4000</th>
<th>7999</th>
<th>8000</th>
<th>11999</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>1.8%</td>
<td>4.7%</td>
<td>2.8%</td>
<td>5.5%</td>
</tr>
<tr>
<td>500</td>
<td>4.4</td>
<td>6.0</td>
<td>4.7</td>
<td>7.4</td>
</tr>
<tr>
<td>1200</td>
<td>6.4</td>
<td>5.3</td>
<td>4.5</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Profit as a Percent of Shipment Revenue: Non-military Shipments Moving at Section II Rates (1971)

<table>
<thead>
<tr>
<th>Mileage Blocks</th>
<th>4000-7999</th>
<th>8000-11999</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-499</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>500-999</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>1000-1499</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

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*This section repeats Part A of Table 12.

distance of 200 miles, military rates are 1.8 - 4.7% below regular tariff rates. Thus, for each shipment moving at the military rate as opposed to the regular tariff rate, the profit margin would be reduced by 22.5 - 58.8%. Similar statements can also be made for the other shipment weight and distance categories noting that in some instances the military traffic appears to be moving at a loss.

The evidence indicates that the DOD is able to obtain rate concessions from the HHG carriers. The DOD apparently possesses enough political strength to preserve Section 22 which permits it to employ its buying power, as the single largest HHG shipper, to push military rates below regular tariff rates. The likelihood of lower profit margins on military shipments means that potential monopoly gains will be less for an industry seeking protective regulation.

Non-Price Competition

The previous section discussed the problem posed by the DOD in the HHG carriers' attempt to achieve protective regulation. In this section the possibility that monopoly gains actually generated by protective regulation may be dissipated will be discussed.

If minimum rate regulation results in a price greater than marginal cost, each carrier has an
incentive to engage in various forms of non-price
competition to increase its market share. Such efforts
however may prove self-defeating if rising costs cut
into monopoly gains. This point has been made with
respect to the airlines which have been discouraged by
CAB regulation from competing on the basis of price.
An airline attempting to increase its market share will
offer a greater number of flights, more elaborate meals,
etc. As other airlines duplicate these efforts, load
factors fall leading eventually to lower profits and
higher prices. In the trucking industry it has been
argued that artificially maintained prices drive motor
carriers to purchase more trucks in an effort to offer
greater frequency of service. A lower utilization of
capacity results and cartel profits tend to be elimi­
nated. The argument has been stated more formally by
Stigler. In his model a fixed product price, constant
marginal cost of output and a non-price factor together,
and an unregulated price and quantity of some quality
variable lead firms to compete away any excess profit.

66George Eads, "Competition in the Domestic Trunk
Airline Industry: Excessive or Insufficient?," (unpub­
lished manuscript) Princeton University, 1972, pp. 7-8.
67Kahn, op. cit., II, p. 189.
68George J. Stigler, "Price and Nonprice Com­
petition," Journal of Political Economy, LXXII
(February, 1968), pp. 149-154.
If marginal cost rises, however (which Stigler argues to be the more likely case), excess profits are not entirely competed away.

Possible forms of non-price competition for HHG carriers include:

1. the provision of auxiliary services (packing, temporary storage, additional insurance, etc.)
2. advertising and other sales promotion
3. meeting promised pickup and delivery dates
4. accurate pre-move estimates
5. minimization of loss and damage to goods

Consumer advocates, however, would maintain that there is little evidence of excessive non-price competition among HHG carriers that leads to improved service to consumers. The ICC acknowledges receiving 8,000-10,000 letters of complaint per year concerning damage to goods, inaccurate pre-move estimates, and the failure of movers to meet promised pickup and delivery dates. Table 14 presents some of the results of a survey conducted by the ICC to determine the extent of poor performance with respect to certain aspects of service.

Table 14
SURVEY OF HOUSEHOLD GOODS SHIPMENTS

<table>
<thead>
<tr>
<th>Characteristics of Shipments</th>
<th>Percent of Total Shipments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promised Pickup Date Not Met</td>
<td>51.4</td>
</tr>
<tr>
<td>Promised Delivery Date Not Met</td>
<td>34.6</td>
</tr>
<tr>
<td>Underestimates of Over 10%</td>
<td>23.7</td>
</tr>
<tr>
<td>Claims of Damage or Loss Reported</td>
<td>22.2</td>
</tr>
</tbody>
</table>


Without a competitive benchmark, one cannot conclude whether statistics such as those of Table 14 indicate that non-price competition has somehow been suppressed. The record does show though that HHG carriers have attempted to suppress non-price competition. L.J. White has shown that excess profits are not necessarily competed away in an industry if regulators fix not only the price of the output but also the price of the quality variable (e.g. airline meals sold separately at a fixed price). In this case the optimal output and quality are determined simply by their market demands. For HHG carriers, the requirement established in 1939 that each accessorial service be

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priced separately would explain the suppression of at least certain forms of non-price competition.\textsuperscript{71}

Although the provision of important free accessor­ial services has been suppressed, it is virtually impossible to anticipate and control all forms that non-price competition might take. Since there are no restrictions on the acquisition of additional equipment, HHG carriers can compete by having equipment available to meet requested pickup dates. Competition can also take the form of meeting promised delivery dates and by minimizing HHG loss and damage.

HHG carriers are also free to engage in advertising and other sales promotion activities. Data taken from the annual reports of the four largest carriers for 1971 reveals that advertising expenses (account 4450) represented 1.3\% of total operating expenses. If one also includes the salaries of those directly engaged in promotion and solicitation of traffic (account 4410), advertising and sales promotion together represented 18.0\% of total operating expenses for the four carriers. Whether or not these figures reflect excessive advertising and sales promotion is not known but, given the lack of cartel control over such activities, they may well represent a potential source of cost inflation.

In conclusion then, since HHG carriers have not been successful in suppressing all forms of non-price competition one would expect at least some dissipation of monopoly gains which have resulted from protective regulation. On the other hand, given Stigler's assumption of rising marginal cost, the optimal extent of non-price competition would be something less than that which would completely erode excess profits.

**Interlining**

As described in Chapter II, interlining refers to (1) the actual transfer of a shipment from the van of a certified origination carrier to the van of a certified destination carrier or (2) the transfer from one authorized carrier to another of the partially or fully loaded van itself. Through the use of interline arrangements a carrier can solicit shipments destined beyond the geographic scope of its operating authority. Because of this, interline activity also represents a form of market encroachment.

Suppose that the ICC has granted authority to Carrier I to operate between points A and C while Carrier II has been authorized to operate between points A and B and Carrier III between points B and C. Given this assignment of carriers to specific geographic areas, Carrier I will be protected from competition for traffic originating at A and destined for C or vica versa. The
possibility of interlining however would represent a direct threat to this market protection. If Carrier II establishes an interline arrangement with Carrier III, II can compete with I for shipments originating at A and destined for C. In general then, interline activity would appear to weaken the protection that the ICC can offer by its grant of certificates which assign carriers to specific geographic areas.

The industry attitude toward interlining would appear to be one of ambivalence. Those holding nationwide certificates would tend to be net losers while those holding the very small certificates would tend to be net gainers. The rest of the carriers would benefit by being able to compete beyond the scope of their certificates but would lose to the extent that they faced stiffer competition from carriers with even smaller operating authority who are interlining in their own area. This ambivalence is reflected in the ICC's attitude toward interlining.

On the one hand the ICC has not prohibited interlining. As argued in Chapter II, the ICC had created highly fragmented market areas with its original grants of certificates. As shippers' transportation demands changed over time (markets shifted and lengths of haul tended to increase), in many areas shippers found that their local or regional carriers were not authorized to
serve desired destination points. In permitting interlining the ICC may have been attempting to head off protest by shippers and their elected representatives and by carriers holding certificates which changing market conditions had rendered obsolete.

On the other hand the ICC has restricted interlining somewhat. To the extent that interlining involves the transfer of equipment, the carriers must:

1. have a written contract containing the details of the interchange
2. interchange only at points common to their operating authority
3. perform a thorough safety inspection with the results tabulated on an ICC form
4. identify the equipment as that of the carrier to which it has been transferred.72

Interlining which involves the transfer of only shipments between carriers and not equipment is not regulated except for the general requirement that the transfer must occur at a point common to the carriers' operating authority.

ICC regulations as described above have not made interlining prohibitively costly. Table 15 indicates the extent to which various local and regional carriers engage in interlining. For carriers such as Andrews VL, interline operations are almost as important as

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Table 15
SINGLE-LINE AND INTERLINE ACTIVITY OF CLASS I AND II HOUSEHOLD GOODS CARRIERS (1970)

<table>
<thead>
<tr>
<th>Name of Carrier</th>
<th>Tons Originated (Thousands)</th>
<th>Tons Interlined</th>
<th>Tons Interlined Terminated (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Security</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Andrews VL</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Associated Amer.</td>
<td>5</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Bluff City Trf.</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Crossmans</td>
<td>45</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Dudley's</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Engel Brothers</td>
<td>9</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Kings Van &amp; Stg.</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Lawrence</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Neddles</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Paramount Movers</td>
<td>4</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Rocky Ford</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Security VL</td>
<td>11</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Seven Brothers</td>
<td>1</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Suddath VL</td>
<td>4</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>T.E.K. VL</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Towne Services</td>
<td>15</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>Trans Country</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>United Mvg. &amp; Stg.</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Washburn Storage</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Weaver &amp; Son</td>
<td>8</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Sig Wold Stg.</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wolfe &amp; Sons</td>
<td>82</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Carriers listed are local and regional carriers who reported that they had either originated or terminated at least 1,000 tons of interlined shipments. Class I and II carriers in 1970 are those averaging at least $500,000 in operating revenues. Dashes indicate that less than 1,000 tons were reported.

single-line shipments. TEK VL's interlining with Engel Brothers, Kings Van and Storage, and Trans-American Van Service (the latter is now a nationwide carrier) is more important than its own single-line operations.

The significant amount of interline activity engaged in by the carriers listed in Table 15 does suggest that the barriers to entering particular markets are not as formidable as that indicated by the division of markets among carriers as set forth in their operating certificate descriptions. But this does not lead one to the conclusion that interlining is a perfect substitute for wider operating authority. While the lack of burdensome regulations may not have effectively thwarted interline operations there are various non-regulatory costs which limit its profitability.

To provide further incite into interline operations, 11 HHG carrier cases before the ICC containing discussions of interlining were examined. In each case unsatisfactory interline operations had led the HHG carrier to purchase additional operating authority or apply for an extension of authority into the areas in which interline operations had been conducted. Interline arrangements were characterized generally as being awkward, uncertain,

73 59 MCC 804 (1952); 60 MCC 57 (1954); 60 MCC 415 (1954); 68 MCC 51 (1956); 74 MCC 749 (1958); 86 MCC 139 (1961); 98 MCC 19 (1965); 101 MCC 277 (1966); 103 MCC 533 (1967); 107 MCC 556 (1968); 107 MCC 812 (1967).
inefficient, inexpedient, etc. More specifically, transferring a shipment from one van to another involves the time cost and labor cost of unloading and then reloading and this extra handling increases the possibility of damage to the HHG. If connecting equipment is not immediately available, the shipment must be stored resulting in further delay and additional warehousing expenses. These costs could be avoided by interchanging the equipment itself but some carriers thought this approach to be even more undesirable. Turning over equipment may mean that the van returns empty if interline traffic is unbalanced. Interchanging equipment may also be undesirable when not all of the shipments in a van are destined to points outside the carrier's territory. The carriers also spoke of the disadvantages of divided responsibility in either type of interlining with respect to insurance, routing of equipment, tracing shipments, etc. And finally, there appeared to be a good deal of uncertainty and impermanence to interline agreements resulting in continued re-negotiation costs as one partner would go bankrupt or sell its operating authority to another carrier. For all of the above reasons, interline operations cannot be performed as efficiently as single-line operations under wider authority.

In conclusion, a costless form of interlining would tend to nullify the protection afforded by the ICC's
allocation of specific market areas to individual carriers. Interlining, however, is not a perfect substitute for wider operating authority and as such would threaten but not completely eliminated the benefits of dividing markets among carriers.

Merger Behavior

Table 4 showed that the number of HHG carriers has decreased from 4500 in 1939 to 2523 in 1973. It was also noted that the number of motor carriers of all types subject to ICC regulation fell from more than 26,000 in 1940 to 15,138 by 1972. This decrease in the number of carriers has been due to restrictive ICC entry policy and mergers among existing carriers.74 Thus, merger behavior as a market conduct trait has had a feedback effect on market structure with the result that growing industry revenue is being divided among a smaller number of competitors.

The ICC is required by the Interstate Commerce Act to approve merger proposals. A proposed merger between two parties having combined operating revenues of at least $300,000 for the previous year must be handled according to Section 5(2) of the Interstate Commerce Act. Otherwise, the merger plan is processed under the much more simplified procedures of Section 212(b). The ICC has

74Quoted in Johnson, op. cit., p. 55.
generally approved merger proposals submitted to it.  

A careful examination of the public notices given in the Federal Register for the period 1970-1973 revealed that 148 mergers occured among motor carriers of HHG. Twenty-two of these were approved under Section 5(2) and the remainder under Section 212(b). The two most notable characteristics of this merger sample are that (1) the mergers were generally of the end-to-end variety; not parallel and (2) the mergers were really just acquisitions by one carrier of the operating rights of the other carrier.

End-to-end mergers include the acquisition of operating certificates which expand the geographic market area of the resulting carrier. Parallel mergers, in contrast, involve unification of the assets of carriers with competing operating authority. End-to-end mergers enable HHG carriers to tap new sources of traffic without having to seek an extension of a carrier's original operating authority from the ICC and without having to face the problems associated with interlining. The

75 Support for this statement is contained in Chapter V.

end-to-end nature of the mergers is also consistent with the fact that the fixed plant for HHG carriers and hence fixed costs are small meaning that little could be gained by consolidating competing fixed facilities. This is in contrast to say railroads where parallel mergers enable the elimination of duplicate track and terminal facilities.

The second merger characteristic of note is that the mergers are really acquisitions by existing carriers of certain assets of other carriers who are exiting from the industry. In practically all cases the only asset that was being acquired was the departing carrier's operating certificate. In effect the departing carrier was selling its market share to an existing carrier. It appears then that the asset of a HHG carrier which is of particular value to other HHG carriers is the operating certificate; not equipment, facilities, goodwill, etc. This same observation has been made by William A. Jordan with respect to mergers among
CAB regulated airlines. The nature of operating certificate values will be examined in considerable detail in Chapter V.

IV. Summary and Conclusion

Chapter III has been divided into two major sections: market structure and market conduct. In the discussion of market structure it was determined that the industry consists of a large number of firms but that number has been declining over time. Available data suggests that the industry is midly concentrated with a large competitive fringe. Published data on concentration however has been derived from industry revenue figures which involve double counting; the result has been an underestimation of the actual degree of concentration in the industry. Published concentration ratios also understate concentration in particular geographic markets e.g. long haul markets where nationwide carriers dominate.

The primary barrier to entry in the industry has been the ICC. The ICC has limited the number of competitors through its power to issue licenses to

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operate (certificates of public convenience and necessity) and has also divided geographic markets among carriers according to ICC imposed certificate restrictions. Finally, through its power to grant certificate extensions, the ICC has some control over encroachment by one carrier into the market area of another carrier.

A unique structural feature of the industry has been the practice by principal HHG carriers of subcontracting the actual physical transportation of HHG to others (primarily hauling agents of the principals). The principals have found that, with operating rights of wide geographic scope, a network of agents, and centralized dispatching, instead of investing in their own line haul equipment they can make use of the excess capacity of their hauling agents which is available in the form of empty back hauls and less than fully loaded vans on front hauls.

Section III on market conduct shows that a high degree of rate uniformity has been achieved among HHG carriers. Although there is a tendency to attribute this to centralized price fixing through industry rate bureaus, rate bureaus lack the power to enforce collusive rate making. Rate uniformity has been enforced by the ICC through its open pricing requirements, its suspension of proposed rates, and its minimum rate orders.

Regulatory barriers to entry and minimum rate controls which hold rates above competitive levels tend
to generate monopoly profits for an industry. In the case of HHG carriers, however, other factors do operate to reduce the level of monopoly profits expected to be generated by protective regulation. These factors include (1) the inability of the ICC to exercise its minimum rate controls over shipments for the military, (2) the inability of the ICC to suppress all forms of non-price competition, and (3) interlining as a method of encroachment on the market areas of other carriers.

Finally, the merger activity in the industry helps explain the steady decline in the number of HHG carriers over time. It was also noted that mergers among HHG carriers are typically (1) territorial expansion mergers and (2) involve the purchase by one carrier of just a particular asset of another departing carrier—the operating certificate.

The structure and conduct of the HHG carrier industry have been analyzed in this chapter as being partially determined by the prevailing regulatory framework. As an alternative, what would be the patterns of organization and behavior in the industry in the absence of regulation? Those who have opposed deregulation of the various transportation industries have frequently argued that, absent regulation, either such industries would evolve into natural monopolies or degenerate under
the forces of destructive competition.

Consider first the conventional natural monopoly argument for regulation. Do HHG carriers exhibit economies of scale which are so pervasive as to lead to a one firm industry with a resulting capability for monopolistic exploitation? As argued in Chapter II, the absence of scale economies in the hauling of HHG would enable a large number of small firms to be viable competitors in an unregulated market if they are tied to a central dispatcher or if they concentrate on short hauls where it is more profitable to return empty than to attempt to secure return loads.

On the other hand, due to the threshold costs of establishing an agency system and dispatching facilities and the scale economies expected in dispatching, one would expect to observe greater concentration of output among carriers competing in the longer haul markets. Such scale economies, however, would not be expected to lead to a few firm or natural monopoly situation in the absence of regulation because other avenues to lower costs are still available to smaller firms in the form of economies of longer hauls, heavier loads, or greater traffic density. Small firms specializing in service to particular markets (e.g. a long haul, high density route such as New York-Miami) would not be unexpected.
It should be noted that the dominance of Aero Mayflower, Allied, North American, and United over the decades is more reflective of restrictive entry policy than underlying pervasive scale economies. In fact, the evidence of Chapter II indicates that the big four who account for approximately one-third of industry revenue have not grown more rapidly than the rest of the industry between 1949 and 1971. This is curious since, if there are significant scale economies, one would expect these firms to be outbidding smaller carriers on the unregulated commissions offered to hauling contractors and thereby acquiring a growing share of the market.

There already exist 24 nationwide and 120 regional carriers of vastly differing size and in the absence of regulatory entry barriers one would expect that there is room for even more firms favorably situated enough in terms of shipment characteristics to offset the economies realized by those engaged in large scale dispatching. Fears of a tendency toward natural monopoly in the absence of regulation would seem unjustified for this industry.

Others opposing deregulation argue that what will result is not too little competition but too much competition. Recalling the pre-regulation depression era, they speak of destructive competition which hurts both
transportation firms and shippers. In the economics literature, destructive competition refers to a situation in which competitive pressures have forced price well below average total cost and losses are incurred for substantial periods of time. In addition, as firms attempt to cut costs, the quality of service offered to shippers deteriorates.

For competition to become destructive, an industry must possess the following characteristics: (1) a high ratio of fixed cost to total cost and (2) significant sunk costs i.e. investment in factors of production which are specialized to an industry such as rail track and roadbeds. Without (1), price could not fall far before the shutdown point was reached (i.e. minimum average variable cost). Without (2), resources would exit the industry preventing long term losses from being incurred.

HHG carriers as well as trucking in general are not characterized by either of the above cost conditions. It is generally agreed that fixed costs are small in trucking particularly because motor carriers need not construct their own way. In addition, disinvestment is rapid in the face of losses as the basic unit of capacity, the truck, can be sold, shifted to another geographic market, or rapidly depreciated. Thus, in the absence
of regulation, there is little reason to expect that a natural monopoly will evolve from a wave of mergers or internal expansion or that the industry would be plagued by excess capacity and long term losses because of excessive competition.
CHAPTER IV

THE EFFECT OF REGULATION ON RATE LEVELS

I. Introduction

Collusive rate-making among HHG carriers has been facilitated by the following regulatory provisions which were described in Chapter II:

1) open pricing and adherence to tariffs
2) ICC power to suspend rates and to impose minimum rates
3) the right of carriers and rate bureaus to protest rate cuts by individual carriers
4) suppression of certain forms of non-price competition which could serve as indirect rate cuts
5) antitrust immunity for price-fixing through industry rate bureaus.

In Chapter III evidence was presented which indicates that the ICC is and has been active in exercising its power to suspend proposed rate cuts and to impose minimum rates at least in the case of motor carriers of general freight. For HHG carriers directly, the evidence indicates that the effect of the above provisions has been to create a high degree of rate uniformity in the industry.

According to the producer protection hypothesis, if an otherwise competitive industry is protected from rate competition by regulations such as those listed
above, one would expect to observe rates being raised above competitive levels i.e., above marginal costs. The purpose of the present chapter is to test this hypothesis by comparing the rates of ICC regulated HHG carriers with those of an unregulated sector of the industry. It is assumed that the "natural" market structure of both the regulated and unregulated sectors is competitive. For ICC regulated carriers, the absence of economies of scale in hauling operations implies that a large number of small scale trucking firms would exist and this large number would preclude the possibility of effective collusion. Although scale economies are expected in dispatching operations, dispatching would probably not be used in short haul markets such as that considered in the present comparison. The nature of competition in the unregulated sector will be discussed in Section II.

Aside from the level of rates prevailing in the regulated versus the unregulated sector, other comparisons can be made. In particular, despite temporal fluctuations in demand, interstate HHG carriers are not permitted to vary their rates according to the intensity of demand. An attempt is made to determine if temporal rate fluctuations do occur in the competitive unregulated sector. A positive finding would suggest that the inflexible rate structure of ICC regulated HHG carriers
would constrain attempts to maximize profit.

II. Maryland as an Unregulated Competitive Sector

Geographically, the largest remaining unregulated market for HHG carriers in the U.S. is that represented by the state of Maryland. Under the Public Service Commission Law of 1932 the Public Service Commission (PSC) of Maryland is permitted to regulate only certain classes of intrastate motor carriers. Regulation in such cases includes the issuance of permits, the power to fix minimum rates, and the requirement that motor carriers publish their tariffs and file them with the PSC.

Under Section 32 of the Public Service Commission Law, certain intrastate motor carriers are exempt from regulation. This includes according to paragraph b(3):

Any motor vehicle (except used for the carriage of flammables) carrying solid loads of freight owned by a person who hires the exclusive use of the vehicle, where the load is to be delivered for only one consignor to one consignee and no return load is to be carried on the trip for any other consignor or consignee.

The provision was originally intended to exclude dump

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1 The first state to regulate intrastate HHG carriers was Pennsylvania in 1914 and the most recent state was New Jersey in 1970.

2 "Public Service Commission Law," Article 78, Section 32, Paragraph b(3) in Annotated Code of Maryland.
trucks and building supply trucks from regulation but it has a wider applicability. Intrastate HHG carriers represent one group of motor carriers who have always operated as exempt carriers under paragraph b(3) since it accurately describes the nature of their operations in Maryland. Thus, intrastate HHG carriers in Maryland are subject to no economic regulation in contrast to interstate carriers.

Not only are Maryland HHG carriers not regulated, their industry also has many characteristics of a competitive market. There are approximately 175 HHG carriers engaging in intrastate operations in Maryland. This would include carriers (1) who also hold interstate authority from the ICC (2) who serve as agents for large interstate carriers and (3) independent carriers who perform intrastate and local service. The carriers tend to be concentrated in the two major population centers of the state: Baltimore and the Maryland suburbs of Washington D.C. Thus the number of potential competitors for a shipment from say a Maryland suburb of Washington to Hagerstown could be as high as 50.

Some of the firms consist of as little as an office,

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3 Interview with J. Lovelace of the Maryland Public Service Commission.

4 Estimate made by the Movers' and Warehousemen's Association of Maryland.
a bookkeeper, a truck, an owner-driver, and a few helpers suggesting that threshold costs should be minimal. Rates are set individually by each carrier; not through rate bureaus as is done by interstate carriers. Intercity rates are based on a direct estimate of work hours involved or on a weight-distance basis.

Approximately 60 of the intrastate movers belong to the Movers' and Warehousemen's Association of Maryland. In addition to serving a public relations function for the industry, the organization has a committee which arbitrates disputes between customers and member carriers. The association has not been involved in the formation and publication of rates because such activity would probably violate state antitrust laws.

Although the intrastate carriers are not regulated at present, the Movers' and Warehousemen's Association of Maryland has recently drafted a bill which would regulate the Maryland movers. The proposed "Public Movers Act" bears a strong resemblance to the protective regulation under which interstate HHG carriers operate. Except for grandfather carriers, intrastate movers must obtain certificates of public

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convenience and necessity which requires that an applicant prove the need for his service and the inadequacy of existing service. Intrastate movers would be required to publish tariffs and file them with the PSC. Tariffs must be adhered to and 30 days' notice must be given for a proposed rate change. Proposed rate changes can be suspended by the Commission on its own initiative or after complaint by any interested party, including other carriers. Rates could be set and published collectively (i.e. through rate bureaus) and such rate agreements would be exempt from antitrust laws. So far the smaller carriers in the association have prevented the bill from being introduced into the Maryland legislature. They appear to be unconvinced as yet that the benefits from regulation will exceed the costs of compliance, the latter tending to be independent of the size of the carrier and thus disproportionately burdensome for the smaller carriers.

One limitation on using Maryland as an unregulated competitive sector is that a rate comparison can be made for only relatively short hauls. State boundaries impose upper limits of about 150 miles on intrastate shipments. In contrast, the published interstate

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6It should be noted that the proposed bill is modeled after legislation adopted in New Jersey in 1970.
III. The Maryland Rate Survey

Survey Method and Results

Interstate rates appear in published form and were obtained directly from the Household Goods Carriers' Bureau in Washington and from the tariff revisions on file at the ICC. Intrastate rates, being unpublished, were more difficult to obtain. Rate quotations from Maryland movers were obtained by telephone survey in the Baltimore area and the Maryland suburbs of D.C. Most Maryland movers wanted to actually examine the size of the shipment before making a final estimate but were not reluctant to compute estimates based on a description of the HHG given by telephone.

To obtain estimates from the Maryland movers, the author posed as a customer planning to move 7000 pounds a distance of 125 miles within Maryland (either from College Park to Cumberland or from the west side of Baltimore to Cumberland). The 7000 pound figure was derived by the author from an actual inventory taken of the contents of a particular small three bedroom ranch style house with no basement. Each item was converted to a cubic footage measurement using the conversion factors of the standard industry estimating
form. The cubic feet total was then converted into pounds using the industry adopted conversion factor of 7 lbs./cubic foot. This inventory enabled the author to give standardized answers when estimators asked about the actual contents of the 7000 pound shipment.

The first telephone survey was conducted on September 13 and 14, 1973. Ten rate quotations were obtained by telephone from movers in the Baltimore area and 13 estimates were obtained from movers in the Maryland suburbs of Washington. It proved necessary to call about two movers for every one rate quotation obtained as estimators were not always available, some movers were local, not intercity, etc. The rate quotations for the September survey are listed in Columns (1) and (3) of Table 16.

A second survey was conducted on March 21, 22, and 24, 1974 which included 8 of the original 10 Baltimore area movers plus 4 additional quotes and 10 of the original Maryland suburb movers plus 6 additional quotes. The rate quotations for March are shown in Columns (2) and (4) of Table 16.

The rates listed in Table 16 are for loading, transporting, and unloading the specified shipment. Accessorial services such as packing would involve an extra charge. The only adjustment which was made of the rates was for the purpose of standardizing the
## Table 16
MARYLAND RATE QUOTATIONS FOR 7000 POUNDS MOVING 125 MILES

<table>
<thead>
<tr>
<th></th>
<th>Baltimore Movers</th>
<th>Movers in Maryland Suburbs of Washington, D.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>c $240</td>
<td>c $263-273</td>
<td>c $225-240</td>
</tr>
<tr>
<td>b 260</td>
<td>c 275</td>
<td>c 298</td>
</tr>
<tr>
<td>c 262</td>
<td>b 310</td>
<td>c 325</td>
</tr>
<tr>
<td>a 250-300</td>
<td>a 332</td>
<td>c 300-350</td>
</tr>
<tr>
<td>a 285-310</td>
<td>a 370</td>
<td>c 335</td>
</tr>
<tr>
<td>c 300</td>
<td>b 413</td>
<td>c 325-350</td>
</tr>
<tr>
<td>c 310</td>
<td>c 419</td>
<td>c 348</td>
</tr>
<tr>
<td>a 390</td>
<td>a 430</td>
<td>b 354</td>
</tr>
<tr>
<td>a 400</td>
<td>a 450</td>
<td>a 360-385</td>
</tr>
<tr>
<td>c 460</td>
<td>a 500</td>
<td>c 375-400</td>
</tr>
<tr>
<td>a 550-600</td>
<td>b 500</td>
<td>c 390</td>
</tr>
<tr>
<td></td>
<td>b 513</td>
<td>c 400-450</td>
</tr>
<tr>
<td></td>
<td>b 600</td>
<td>c 431</td>
</tr>
</tbody>
</table>

**Average Rate Quotation**

|                        | $319 | $382 | $351 | $381 |

**Legend:**
- **a**—carrier has interstate operating authority
- **b**—carrier is an agent for an interstate carrier
- **c**—carrier is an independent local and intrastate carrier

**Source:** Columns (1) and (3) are from a telephone survey: September 13 and 14, 1973. Columns (2) and (4) are from a telephone survey: March 21, 22, and 24, 1974.
insurance coverage at 60¢/lb./article which is the minimum interstate coverage.

Rate Dispersion

For each column in Table 16, there is a wide range between the low and high rate quotations. A closer examination of the table suggests that the lower quotes tend to come from independent carriers while the higher quotes tend to come from interstate carriers or carriers who are agents of interstate carriers. In Table 17, average rate quotations are shown for the different types of carriers.

Table 17

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a, b, c</td>
<td>$319</td>
<td>$382</td>
<td>$351</td>
<td>$381</td>
</tr>
<tr>
<td>c</td>
<td>314</td>
<td>303</td>
<td>323</td>
<td>341</td>
</tr>
<tr>
<td>a, b</td>
<td>325</td>
<td>421</td>
<td>395</td>
<td>468</td>
</tr>
</tbody>
</table>

Source: Table 16.
One explanation for the higher rate quotations from interstate carriers or agents thereof is that their quality of service is greater or at least consumers perceive it to be and thus are willing to pay a premium for service provided by a carrier operating under a nationally or regionally known name.

The columns of Table 16 show, however, that there is considerable rate dispersion even among carriers of the same type. Some of this dispersion may reflect variation in the quality of service performed by the carriers. Even if the quality of service was uniform though, one would expect price dispersion to exist. As Stigler argues: "Price dispersion is a manifestation—and indeed, it is the measure—of ignorance in the market." 7

A primary source of ignorance in the market for transporting HHG is the infrequency with which given consumers purchase the services of HHG carriers. Potential HHG shippers enter the market with little or no knowledge of asking prices. Ignorance can be reduced only by expending resources on search (such as the time involved in having an estimator come to one's home to examine the HHG). In contrast,

experienced buyers in a market benefit from a presumed positive correlation of asking prices in successive time periods. They would be expected to pay lower prices on average and the variance of the prices paid would be expected to be less.  

IV. The Rate Comparison

In this section a comparison is made between unregulated Maryland rates and interstate rates. Comparable interstate shipments would be those originating in Baltimore or a Maryland suburb of Washington, D.C. and destined to points outside the state of Maryland. Such shipments would have to be transported by carriers operating under certificates issued by the Interstate Commerce Commission. These carriers would be required to use their lawfully filed interstate tariffs which in fact are tariffs published by industry rate bureaus.

Table 18 presents a comparison of rates quoted by Maryland HHG carriers with those applying on interstate shipments. The comparison is made for the loading and unloading of a 7000 pound shipment with a length of haul equal to 125 miles. Insurance

coverage for both the interstate and intrastate shipment is 60¢/lb./article.

It is implicitly assumed in the comparison that the appropriate Maryland rate to use is that represented by an average of rate quotations for each group. Actually, a simple average of rate quotations probably overstates the rate that customers would typically be paying. This is because one expects that there is a negative correlation between the size of a rate quoted by a carrier and the number of shipments handled by that carrier. A more appropriate rate to use then would be that represented by a weighted average of rate quotations where the weights depend upon the number of intrastate shipments handled by the various carriers. Unfortunately, published data on the number of intrastate shipments by Maryland carriers is not available so weighted averages could not be used. It must be kept in mind then that the decision to use simple average rate quotations for the present comparison implies that the measure of Maryland rates used is likely to be biased upward.

As Part C of Table 18 shows, the regulated interstate rates are substantially higher than the
Table 18
COMPARISON OF UNREGULATED AND REGULATED RATES
FOR A 7000 POUND-125 MILE SHIPMENT

Part A

Unregulated Rates For Intrastate Shipment

<table>
<thead>
<tr>
<th>Type of Intrastate Maryland Carrier</th>
<th>Shipment Originating in Baltimore</th>
<th>Shipment Originating in Maryland Suburbs of Washington, D.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Carriers</td>
<td>$319</td>
<td>$382</td>
</tr>
<tr>
<td>Independent Carriers</td>
<td>314</td>
<td>303</td>
</tr>
<tr>
<td>Carriers With Interstate Authority</td>
<td>325</td>
<td>421</td>
</tr>
<tr>
<td>or Agents Thereof</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Part B

Regulated Rates For Interstate Shipment

<table>
<thead>
<tr>
<th></th>
<th>$461</th>
<th>$533</th>
<th>$552</th>
<th>$637</th>
</tr>
</thead>
</table>
Table 18-Continued

Part C

Percentage Markup of Regulated Rates Over Unregulated Rates

<table>
<thead>
<tr>
<th>Type of Intrastate Maryland Carrier</th>
<th>Shipment Originating in Baltimore</th>
<th>Shipment Originating in Maryland Suburbs of Washington, D.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Carriers</td>
<td>44.5</td>
<td>39.5</td>
</tr>
<tr>
<td>Independent Carriers</td>
<td>46.8</td>
<td>75.9</td>
</tr>
<tr>
<td>Carriers With Interstate Authority</td>
<td>41.8</td>
<td>26.6</td>
</tr>
</tbody>
</table>

Source: Part A from Table 19 and Part B from Appendix.
competitive unregulated interstate rates and this is true whether one considers the rates of all Maryland carriers together or whether the rates are grouped by type of Maryland carrier. The rate markups range from a low of 26.6% to a high of 86.8%. In the absence of ICC regulation, then, one would expect that interstate rates would be significantly lower at least for the shipment weight and distance considered here.

V. Demand Fluctuations and Rate Flexibility

In Chapter II it was pointed out that HHG carriers experience seasonal variability in the demand for their services. May through October is considered the busy season while November through April is the slack period. Within each month, demand peaks are observed at the beginning and at the end as leases expire. The peak period of the year occurs during the latter part of August and the beginning of September. The fluctuating nature of demand implies that unconstrained profit maximizers would tend to establish rate differentials corresponding to known regular peak and off-peak periods.

Interstate HHG carriers have not been permitted by the ICC to adjust rates according to the intensity
of demand. Such rate inflexibility would constrain attempts by the industry to maximize profit. Intra-state Maryland carriers, however, are free to adjust rates as demand varies and are known to do so. One Maryland carrier made the following statement:

Our charges are flexuous with the season. During the busy summer monthends, we base our rates on the highest section of the existing interstate tariff and will increase this rate, too, if someone calls at the last minute and is desperate for a mover . . . and we usually get the higher rate . . . . During the slower periods, we use one of the lower sections of the interstate tariff to determine the applicable rate.\(^9\)

An attempt was made as part of the Maryland rate survey to directly test the hypothesis that, ceteris paribus, prevailing competitive rates on intrastate Maryland shipments are higher during peak periods than during off-peak periods. The September telephone survey was made at the end of what is generally considered to be the peak period of the year. In contrast, the second telephone survey was made during March; generally recognized as one of the slack periods of the year. Ceteris paribus, one would expect that the September rates would be higher that the March rates as carriers would be operating on higher segments of their marginal cost curves.

\(^9\)From a questionnaire mailed to Maryland movers during August, 1973.
The carrier sample represented by Table 16 contains 8 Baltimore area carriers and 10 carriers from the Maryland suburbs of Washington who gave rate quotations for both the September and March surveys. Of these 18 carriers, only 5 gave lower rate quotations during the off-peak March period. The average rate quotation for the Baltimore area movers was $328 in September and $388 in March which represents an 18.3% increase. For movers in the Maryland suburbs of Washington, the average rate quotation was $345 in September and $361 in March for a 4.6% increase. In general then, the evidence indicates that rates were actually higher during the presumed off-peak March period.

One explanation for this finding is that the ceteris paribus assumption did not hold for the period of September 1973 through March 1974. In particular, upward shifting cost curves during the period may have more than offset the effect of a smaller demand in March.

Fuel is one input known to have risen in price during the period under consideration. The gasoline component (regular and premium) of the Consumer Price Index rose by 34.7% between September 1973 and March 1974 under the partial freeze of wages and prices of Phase IV. More appropriate for the present discussion

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would be the behavior of the gasoline component of the Wholesale Price Index which consisted of unfrozen spot market prices. The WPI for gasoline rose by 120% between September and March.\(^{11}\)

How much of a fuel price increase would be passed on to HHG carrier customers depends upon the proportion of total operating expenses represented by fuel cost. For 1971, such data is available for 41 Class I and II interstate HHG carriers.\(^{12}\) These carriers were selected because data on fuel and oil expenses is available only for vehicles owned by the carrier (as opposed to rented vehicles) and there are 41 carriers who transported all of their shipments in their own vehicles. Fuel and oil expenses for these carriers accounted for 2.3% of total operating expenses, on average. The percentages ranged from a low of 0.8% to a high of 6.1%. These percentages may seem surprisingly low for a trucking firm but the limited published data yields similar figures. Using 1968 data, Mooz calculated fuel cost to be 3.59% of total operating revenues for motor carriers of all types.\(^{13}\)


In 1968, the operating ratio was 95.2 for Class I and II motor carriers which suggests that fuel cost as a percent of operating expenses was 3.42%.

If fuel and oil continue to be used in the same proportion with other inputs, a 120% fuel price increase implies that unit cost will rise by $1.2 \times 2.3\% = 2.8\%$ (or 4.1% using Mooz's figure). Now under the assumption that Maryland HHG carriers are a competitive constant cost industry which is initially in long run equilibrium, if unit cost rises by 2.8% (4.1%) price must rise by 2.8% (4.1%) to restore long run equilibrium. The long run adjustment would occur rather rapidly for motor carriers given the typically high ratio of total variable costs to total costs in the short run. Thus, the fact that rates were higher during what was expected to be an off-peak period can be partially explained by increases in the cost of fuel and oil.\(^{15}\)

Given the inflationary state of the economy at the time (between September and March, the overall CPI

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\(^{15}\text{Rising fuel prices led the ICC to grant a fuel surcharge to interstate HHG carriers at the beginning of 1974. The surcharge amounted to a 6\% increase in the transportation charge for a shipment. It is known that some Maryland HHG carriers also adopted this figure for intrastate shipments which would be reflected in the March but not the September rate quotations.}\)
and WPI rose 5.6% and 10.2% respectively), it is likely that the prices of other inputs rose during the September-March period although by much smaller amounts. Unfortunately, published data on the prices of other inputs used by HHG carriers is either not available or of limited use. It is known though that the average hourly earnings of nonsupervisory trucking and truck terminal workers increased 1.8% on a nationwide basis between September and March. An examination of the 41 HHG carriers used to determine fuel and oil expenses as a percent of total operating expenses reveals that the wages of truck drivers and helpers account for 33.6% of total operating expenses. Thus, if wages rose by 1.8%, price would rise by 0.6%.

The increased price of fuel and oil and the increased wages of truck drivers and helpers together imply that rates would be 3.4% higher (or 4.7% higher using Mooz's figure) despite the fact that March is considered an off-peak period. Since the input categories considered so far account for less than 40% of total operating expenses, any price increases for other inputs would strengthen the case that higher rates in March

17 TRINC, op. cit., pp. 115-133.
can be explained by upward shifting cost curves. Overall though, the evidence is not convincing that cost curves shifted upward by an amount sufficient to explain the fact that off-peak rates exceeded peak rates by 18.3% in Baltimore and 4.6% in Washington.

An alternative explanation for the higher rates observed in March involves the problem of identifying peak and off-peak periods. It is plausible that seasonal demand had already passed its peak by the time that the September 13 and 14 survey was made. In addition, although March is an off-season month, the March survey occurred toward the latter part of the month where month ends are known to be peak demand periods throughout the year. Thus, given the two time periods in which the surveys were actually made, it is conceivable that demand was actually greater at the time of the March survey which would explain why the March rates were observed to be higher than rates in September. At present, however, this alternative explanation is not testable because there is no published data which would pinpoint peak periods of the year and peaks within any given month.

VI. Conclusion

ICC regulation of interstate HHG carriers has had the effect of significantly raising rates on interstate shipments above competitive levels. It was found that
ICC regulated rates represent a markup of 26.6-86.6% over unregulated intrastate rates on comparable shipments moving within Maryland.

On the other hand, it was argued that interstate HHG carriers are constrained in exercising monopoly power in pricing because, despite seasonal fluctuations in demand, they are not permitted to charge peak and off-peak rates. As part of the Maryland rate survey, an attempt was made to determine if unregulated carriers do, in fact, engage in peak demand pricing. The results of the study were inconclusive, however, given (1) the difficulty of adjusting for the cost increases which also occurred between the two test periods and (2) the problem of clearly identifying peak and off-peak periods.
CHAPTER V

THE SALE VALUE OF HOUSEHOLD GOODS CARRIER
OPERATING CERTIFICATES

I. Introduction

In Chapters II and III it was argued that the regulatory powers granted to the ICC and the ICC's implementation of these powers is generally consistent with the producer protection hypothesis. One implication of the producer protection hypothesis is that the effect of regulation is to raise rates above what they would otherwise be and evidence to support this hypothesis was presented in Chapter IV.

The extent to which protective regulation and inflated rates have actually generated monopoly profits for HHG carriers remains to be determined. The task is not simply one of looking at price differences, since there may be imperfections in protective regulation and there may be limitations imposed by the regulatory process on an industry's attempt to cartelize itself. Such imperfections and limitations, if serious enough, can serve to either prevent the generation of or cause the dissipation of monopoly profits in the industry.

175
In the case of HHG carriers, the following imperfections and limitations have already been noted:

(1) the inability of the ICC to prevent interlining which leads to market encroachment
(2) the inability of the ICC to impose minimum rates on shipments for the military
(3) the ICC's incomplete control of non-price competition (including advertising and other sales promotion) which tends to inflate costs
(4) actions by the ICC to appease vocal consumers e.g. the recent grant of several nationwide certificate extensions to improve service
(5) an inflexible rate structure which prevents peak and off-peak pricing

In addition, the costs of complying with regulation tend to raise industry cost curves and cut into monopoly profits. Such costs would include (1) filing fees for certificate applications and the sale of certificates, (2) those associated with formal cases before the Commission, (3) those incurred in meeting ICC reporting requirements, (4) those resulting from Commission imposed service standards, and (5) membership dues for industry rate bureaus which often act as intermediaries between carriers and the Commission.

In 1971, for example, the four largest HHG carriers incurred expenses totaling $357,737 associated with the operation of legal departments and engaging in formal cases before the Commission.¹

Another source of monopoly rent dissipation stems from the inefficiencies associated with a cartel that does

not set quotas and pool earnings. Quotas which equalize the marginal cost of each member have not been established for HHG carriers with the result that costs are higher and profits lower than they could be under a more formal cartel arrangement.

The argument that monopoly profits generated by protective regulation in the trucking industry are expropriated by the Teamsters has also been considered.\(^2\) This argument, however, is not relevant for HHG carriers because drivers, in particular, tend to be non-union independent owner-operators.

The factors listed above will limit the extent of monopoly profits that accrue directly to HHG carriers, although it is impossible to know a priori how much. In this chapter the author attempts to estimate the monopoly gains which ICC regulation of HHG carriers has generated in recent periods. The importance of this measure as a test of the producer protection hypothesis is obvious, while attempts to develop such a measure are rare. As George Hilton has remarked: "No one, to my knowledge, has attempted to quantify the monopoly gain of . . . truckers . . . ."\(^3\)

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The present study represents an effort to fill that void for one segment of the trucking industry.

Section II of this chapter presents the argument that monopoly gains generated by protective regulation have been capitalized into the sale value of transferable operating certificates. Section III develops the model used in estimating the sale value of the numerous small radial certificates and empirical results are presented. In Section IV, an attempt is made to estimate the sale value of the largest monopoly grants; the nationwide non-radial operating certificates. Section IV also includes estimates of the sale value of all outstanding HHG carrier certificates.

II. The Creation and Disposition of Monopoly Gains

Suppose for a moment that ICC regulation of interstate HHG carriers has resulted in the generation of monopoly gains for the industry. In what form will the gains appear? Each carrier employs a set of inputs, $x_1, \ldots, x_m$ at prices $r_1, \ldots, r_m$. One of the inputs, the operating certificate $x_j$, is specific to the industry i.e. its supply is relatively fixed, it is absolutely necessary for operation as an interstate HHG carrier, but its value in alternative employments is zero.\(^4\) All other inputs are assumed, at least

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\(^4\)Similar "operating rights" include taxi medallions, tobacco acreage allotments, broadcasting franchises, liquor store licenses, and memberships for the New York Stock Exchange.
initially, to be in perfectly elastic supply to the carriers.

In a profit maximizing cartel with no pooling of earnings, the $i$th member will receive the difference between revenues and factor payments ($p*_q - \sum_{j=1}^{m} r_j x_j$, where $p_*$ is the cartel price) which can properly be called monopoly rent. Its long run existence is due to the artificial scarcity of $x_j$ which prevents resources from entering the industry. Such monopoly rents tend to be appropriated by the owners of the operating certificates whether certificates are purchased, leased, or already owned.

If a certificate is sold in a free competitive market, the price paid will tend to equal the capitalized value of the certificate. The capitalized value of an operating right is the present value of the stream of net returns which the holder expects to obtain under ICC protection:

$$ V = \sum_{h=1}^{n} \frac{R_h}{(1 + r)^n} $$

where $V =$ capital value of a given certificate  
$R_h =$ expected net return (monopoly rent) in the $h$th period  
$r =$ interest rate obtainable on other investments of comparable risk

and $\delta V/\delta R_h > 0$, $\delta V/\delta r < 0$. 
In this case the monopoly rent is realized by the original owner of the certificate while the buyer can expect to earn only normal returns.

If \( r = 10\% \) and the certificate is expected to yield \$1,000 per year indefinitely, it would tend to sell for \$10,000. If the purchaser paid more than \$10,000 his return would be less than from alternative investments. On the other hand, the present holder of the certificate would not sell for less than \$10,000 because that return would be smaller than he now receives.

Even if a carrier holds an operating certificate already (e.g. under the grandfather clause), the difference between receipts and factor payments should be imputed as a rent to the owner of the certificate. If the operating certificate is properly valued as an asset, again the carrier will show only normal returns and the monopoly rent will not be realized until the certificate is sold.

The basic argument then is that any monopoly gains generated by ICC regulation will tend to be capitalized into the market value of transferable operating certificates.
III. The Estimation of Monopoly Gains

The Market For Operating Certificates

The market for operating certificates is organized to the extent that prospective sellers will advertise their certificates in such industry papers as Movers Journal or Transport Topics. Carriers looking for a certificate in a particular geographic area may place a "Want to Buy" ad in such papers. Carriers are also known to pay "finder's fees" for bringing together certificate owners and prospective purchasers. Once a buyer and seller reach an agreement on the terms of sale, the certificate transfer must be submitted to the ICC for approval under Section 5(2) or Section 212(b) of the Interstate Commerce Act.

Under Section 5(2), the ICC is required to consider whether the proposed transfer is in the public interest and more specifically (1) the effect of the proposed transaction upon adequate transportation service for the public (e.g. will service be improved) (2) the reasonableness of the purchase price and (3) the interest of all involved employees. In practice however, proposed transfers are generally approved.

James C. Johnson recently examined a random sample

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of 450 Section 5(2) cases for motor carriers of all types and found that 74% were approved. The most common reason for denying transfers is a demonstration that the seller has allowed his operating rights to become "dormant". It should be emphasized that Johnson found not a single case in which the ICC altered the selling price arrived at by the parties involved.

If the buyer and seller have had combined gross operating revenues of less than $300,000 for the previous year, a proposed certificate transfer becomes subject to Section 212(b) which is designed to make transfers simple and inexpensive to small firms. Most transfers do occur under Section 212(b) and the ICC has been even more acquiescent than in Section 5(2) cases. The ICC Bureau of Finance found that between 1935 and 1959 88% of the 38,612 applications under Section 212(b) were approved. It seems fair to conclude then that the market for operating certificates is reasonably well organized and operates with only minor outside interference from the ICC.

Since operating certificates are transferable and are usually sold separately from other carrier

6Ibid., p. 164.

assets, in contrast to say tobacco rights or broadcasting franchises, actual sale prices corresponding to the V's in equation (1) are available for analysis. Using the sale prices in a multiple regression analysis, the market value of an operating right can be determined by various independent variables. The estimated parameters can then be used to predict the market value of each outstanding certificate. Summing over all certificates would yield a measure of the aggregate monopoly gain resulting from protective regulation.

The Nature of Operating Certificates

Since the operating certificates are central to the subsequent analysis, their nature should be made more explicit at this point. Generally speaking, there are two types of HHG certificates which have been issued by the ICC: radial and non-radial. A radial certificate authorizes operations from a fixed base (hub) to points or places located within a prescribed radial area (rim) or from any point located within the radial area to the carrier's fixed base e.g.:

Between Philadelphia on the one hand, and on the other N.Y., N.J., Conn., and Mass.

This certificate would not permit operations between points in the rim e.g. between Boston, Massachusetts and Hartford, Connecticut. Non-radial authority permits a carrier to operate between any points in a
prescribed area without respect to a hub community or a fixed base of operations e.g.:

Between points and places in Pa., N.Y., N.J., Conn., and Mass.

Most interstate HHG carriers belong to either the HHG Carriers' Bureau or the Movers' and Warehousemen's Association of America. A count of the combined membership for 1971 indicated that there are 1839 interstate HHG carriers and they hold a total of 2821 certificates. Very few of the 1839 HHG carriers have operating certificates with identical geographic authorization. This fact is consistent with the argument put forth in Chapter III that the ICC has the power, under Section 208 of the Motor Carrier Act, to carve out grants of authority to each carrier in a manner that attempts to minimize competition in any particular area.

An examination of the 2821 certificates reveals that the hubs of the radial rights range from small towns to as many as 14 states. The rims range from some part of one state to more than 30 states. Non-radial rights may be for a few counties or for the entire U.S. In numbers, however, there are only

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231 non-radial certificates whose scope is at least as large as one state and only 323 radial certificates whose hub areas are at least as large as one state. The remaining 2200+ certificates are typically radial with small hubs (e.g. a town, a county, a metropolitan area), although there is a small number of non-radial certificates for less than an entire state and a small number of radial certificates with hubs ranging up to an entire state.

The point should also be made that some HHG carriers hold more than one operating certificate. The average number of certificates per carrier is 1.5 but the certificates do tend to be concentrated among a relatively small number of carriers. Cartwright Van Lines holds the largest number of certificates: 33.

The ICC generally permits a carrier to combine operating rights so that a through service can be provided. The rule is that two certificates may be "tacked" together at a common point with the understanding that any through shipment must actually move through the common "gateway" point. For example, consider two of Pyramid Van Lines' certificates:


(2) Between Mass., on the one hand, and on the other Me., N.H., Vt.
The two certificates can be tacked at Massachusetts permitting shipments from any states in (1) to Maine, New Hampshire, and Vermont via Massachusetts and any shipments from Maine, New Hampshire and Vermont to states in (1) again via Massachusetts. One would expect this tacking privilege to make the combined certificates more valuable than the sum of the two taken separately (unless interlining were not too expensive).

The Nature of the Sample

The purchase prices for certificates were obtained from the ICC in the following manner. First, public notice of applications to transfer certificates must be made in the Federal Register. These notices list the parties involved and contain a description of the operating rights to be sold. In addition, the notices contain the motor carrier finance docket number assigned to each application. Once the docket numbers were known, the ICC could then locate the actual applications in either its current files or from its permanent storage facilities. Among other information, the dockets contain the prices to be paid for the operating certificates being transferred.

9Motor carrier finance docket numbers are those prefixed by MC-F for Section 5(2) cases and MC-FC for transfers under Section 212(b).
Using the described procedure, the sale prices of 103 certificates transferred during the January 1970-August 1973 period were obtained. Table 19 shows a breakdown of the sample by type of operating certificate.

Table 19

HOUSEHOLD GOODS CARRIER OPERATING CERTIFICATE TRANSFERS: JANUARY 1970-AUGUST 1973

<table>
<thead>
<tr>
<th>Type of Certificate Sold</th>
<th>Number</th>
<th>Range in Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial: Hubs Smaller Than One Statea</td>
<td>83</td>
<td>$500-$26,000</td>
</tr>
<tr>
<td>Radial: Hubs At Least As Large As One State</td>
<td>12</td>
<td>$3,000-$75,000</td>
</tr>
<tr>
<td>Non-radial</td>
<td>8</td>
<td>$5,000-$230,000</td>
</tr>
</tbody>
</table>

*aMost of these certificates have hubs no larger than local telephone zones.

Source: Motor Carrier Finance Dockets, Interstate Commerce Commission, Washington, D.C.
The Model For Estimation

It has been argued that there exists a high degree of rate uniformity among HHG carriers. In addition, various forms of non-price competition have been suppressed by special regulations. In the absence of price and non-price competition, each carrier will tend to receive, on average, an equal market share \( q^* \) where in the case of radial certificates:

\[
(2) \quad q^* = \frac{M}{C}
\]

with \( M = \) the total number of shipments originating in the specified hub area and destined to the prescribed rim area

\( C = \) the number of competing certificates

The measure of \( M \) used here excludes moves from the rim area to the hub. This is because the regression equations presented here are based on a sample of small radial certificates (the first group in Table 19) which in practice enable the carriers to secure only a very small proportion of back hauls. For a particular certificate, \( C \) is measured by the number of certificates which have identical or partially overlapping hubs, while the rim areas are typically only partially overlapping.
Given that monopoly rents (excess profits) are capitalized into the sale value of an operating certificate, one can write:

\[(3) \text{PRICE} = \frac{(P^* - \text{LAC})q^*}{r}\]

where \(\text{PRICE}\) = sale value of certificate in current dollars
\(P^*\) = collusively determined price taken as fixed by each individual carrier
\(\text{LAC}\) = long run average cost
\(q^*\) = output of the \(i\)th carrier
\(r\) = interest rate

Initially, \(\frac{P^* - \text{LAC}}{r}\) will be taken as a constant equal to \(k\). Profit per unit of output would be constant, for example, it neither economies nor diseconomies of scale were present. Equation (3) becomes:

\[(4) \text{PRICE} = kq^* = kM/C\]

Now let:

\(s = \) the number of shipments originating in the \(i\)th certificate's hub area per period where \(s\) is asserted to be directly proportional to the population of the hub raised to a power i.e.

\[s = \delta \text{POPH}^{\theta_1}\]

\(z = \) the proportion of shipments originating in the \(i\)th certificate's hub area and with destination in the \(i\)th certificate's rim area where \(z\) is asserted to be directly proportional to the population of the rim raised to a power i.e.

\[z = \gamma \text{POPR}^{\theta_2}\]
It is expected that both $\theta_1$ and $\theta_2$ are positive. The number of expected shipments from the hub to the rim for the holder of the $i$th certificate becomes:

$$q^* = \frac{sz}{C} = \frac{6\text{POPH}^{\theta_1} \gamma \text{POPR}^{\theta_2}}{C}$$

and thus:

$$\text{PRICE} = kq^* = \frac{6\theta_0 \text{POPH}^{\theta_1} \text{POPR}^{\theta_2}}{C}$$

where $\theta_0 = k\delta y$

which can be estimated in logarithmic form as:

$$\ln(\text{PRICE}) = \ln(6\theta_0) + \theta_1 \ln(\text{POPH}) + \theta_2 \ln(\text{POPR}) - \theta_3 \ln(C)$$

with $\theta_3$ expected to equal unity.

**Empirical Results**

Equation (7) was estimated using a sample of 73 radial certificates. The variable PRICE is the sale price of a certificate in thousands of current dollars. No adjustment was made for the effects of inflation due to the difficulty in identifying exact negotiated price dates. Two proxy variables are used to measure market demand: POPH is the hub population in thousands and POPR is the rim population in millions. The population figures used for each certificate were based on the 1970 Census. Finally, $C$ is the number of competing certificates. The determination of $C$ required searching through the certificates of 1839 carriers to find the number of competing certificates for each of the 73
certificates in the sample.

The estimation of equation (7) yields:

(8) \[ L\text{PRICE} = -0.57 + 0.30L\text{P0PH} + 0.51L\text{POPR} - 0.34L\text{C} \]

\[ (2.33) \quad (2.77) \quad (3.67) \quad (2.63) \]

\[ n = 73 \quad R^2 = 0.27 \]

absolute t-values in parentheses

The parameters \( \theta_1, \theta_2, \) and \( \theta_3 \) differ significantly from zero at the .01 level and \( L\theta_0 \) at the .05 level. The estimated parameters all have the expected sign and the explanatory power of the equation is respectable given the simple model from which it was derived.

The coefficient for \( L\text{C} \) of 0.34 was considerably less than the \( \theta_3 = 1 \) implied by equal market shares but this may simply reflect the method used in determining competing certificates. A count of competing certificates tended to include certificates whose hubs only partially overlapped the hub of the certificate in question. This overlapping tended to occur frequently for those certificates whose hubs were in the more populated states (particularly Pa., N.Y., N.J., Conn., and Mass.) where the geographic concentration of towns and cities is greater. It is also true that the geographic distribution of all outstanding certificates is concentrated in these same states. Thus, the larger the number of competing certificates counted, the greater will be
the proportion of only partially competing certificates in that count and these partial competitors will tend to bias \( \theta_3 \) downward from unity.

An alternative model was estimated in which a more direct measure of \( M \) was used. Let \( T \) equal the number of people (five years and older) who lived in the hub of the \( i \)th certificate in 1965 and who moved to the rim area of the \( i \)th certificate by 1970. The variable \( T \) was obtained from the U.S. Bureau of the Census Subject Report PC(2)-2E (1970) Migration Between State Economic Areas. It is assumed that \( M \) is directly proportional to \( T \):

\[
M = eT \\
\text{where } e \text{ is a constant}
\]

In addition, it is posited that \( k = f(M/C) \); in particular:

\[
k = \lambda_0(M/C)^{\lambda_1} \text{ where } \lambda_0 \text{ and } \lambda_1 \text{ are positive}
\]

In this form, a test can be made of the presence or absence of economies of scale. Economies of scale would imply that profit per unit increases as \( M \) increases i.e. \( \lambda_1 \) is greater than 0. A constant \( \lambda_1 \) greater than 0 also suggests that profit per unit decreases as the number of competing certificates increases. The sale value of a certificate is then determined as follows:
(11) \[ \text{PRICE} = \lambda_0^{M/C} \lambda_1^{M/C} = \lambda_0^{M/C} \lambda_1^{M/C+1} \]

Substituting \( eT \) for \( M \):

(12) \[ \text{PRICE} = \nu(T/C)^{\lambda_1+1} \quad \text{where} \quad \nu = \lambda_0 e^{\lambda_1+1} \]

In logarithmic form equation (12) becomes:

(13) \[ \text{LPRICE} = \text{LV} + (\lambda_1+1)\text{L}(T/C) \]

where \( T/C \) is taken as single independent variable.

The estimated equation was:

(14) \[ \text{LPRICE} = -0.86 + 0.48\text{L}(T/C) \]

\[ (2.82) \quad (4.89) \]

\[ n = 71 \quad R^2 = .26 \]

absolute t-values in parentheses

The estimated parameters \( \text{LV} \) and \( (\lambda_1+1) \) both differ significantly from zero at the .01 level. The estimated parameter \( \lambda_1+1 \) was positive, as expected, which implies that an increase in \( T \) or a decrease in \( C \) is associated with an increase in the sale value of a certificate. With \( \lambda_1+1 = 0.48 \), \( \lambda_1 \) must be negative. This is consistent with the presence of diseconomies of scale in operations under radial certificates. A negative \( \lambda_1 \), however, also implies that profit per unit increases as the number of competing certificates rises—an unexpected result. For an increase in \( C \) to be associated with a fall in \( \text{PRICE} \), then, the effect of a decline in \( T/C \) when \( C \) rises must
be greater (in a negative direction) than the effect on profit per unit when G rises i.e. \( \lambda_1 + 1 \) must be positive, which is what the regression equation shows.

**Suggestions for Future Research**

There are several possibilities for future research in terms of a fuller development of the basic model, alternative forms for the estimated equation, and refinement in the measurement of independent variables. Consider, for example, the following certificate which sold for $4000:

Between Philadelphia on the one hand, and on the other Dela., D.C., Md., N.J., and N.Y. Shipments from Philadelphia to Camden, New Jersey, although interstate, are not regulated by the ICC because they are contained in an exempt "commercial zone" which has been defined by the Commission for Philadelphia and some other cities near state boundaries. Such shipments are not blessed with the benefits of protective regulation and their inclusion in the measure of \( q^* \) is expected to cause an overestimate of PRICE for some certificates -- 10 certificates in the sample have Philadelphia as the hub and New Jersey as one of the rim states, part of which is in the

---

\(^{10}\)See for example "Commercial Zones and Terminal Areas," 46 MGC 665 (1946).
Philadelphia commercial zone; 14 certificates have New York City as the hub and New Jersey as one of the rim states, part of which is in the New York City commercial zone.

Another possibility is to alter the model by relaxing the assumption of equal weights for the competing certificates which are included in the measure of C. Certainly a competing certificate with a rim area at least as large as that of the ith certificate represents a more formidable competitor than one with a rim area which is only a small portion of that of the ith certificate. This suggests a model of the following form:

\[
(15) \quad \text{PRICE} = \beta_0 \text{POPH} \sum_{j=1}^{n} \frac{\text{POPR}_j}{\text{C}_j}
\]

\[
\text{POPR}_j = \text{population of the } j\text{th rim state}
\]

\[
\text{C}_j = \text{the number of carriers authorized to serve the } j\text{th rim state from the specified hub}
\]

It should be noted that the model developed in this section was used to estimate the sale value of just the smaller radial certificates. This ignores larger radial certificates and the non-radial certificates where in both cases the occurrence of back hauls becomes a more significant and complicating factor. In Section IV an attempt is made to determine the sale value of the
largest of all certificates — those authorizing unrestricted nationwide non-radial operations. Since there are only 14 of these certificates, it is expected that they represent a large proportion of the total monopoly value of all outstanding certificates.

IV. The Sale Value of Nationwide Non-Radial Certificates

The Purchase of Operating Certificates By Nationwide Carriers

The largest operating certificates authorize non-radial operations between any points in all 48 states. Only 14 of the 2800+ outstanding certificates are this large in scope. Another 6 carriers, by tacking their certificates, can serve the 48 states although they must observe various gateways. An additional 5 carriers, also taking advantage of the tacking privilege, can serve all but a few states.11 These 25 nationwide carriers together account for at least half of industry revenues. Their expansion to nationwide status has been the product of a combination of (1) original grandfather certificates, (2) additional

11 Based on 1971 information, the number of nationwide HHG carriers is 24; this number was used in previous chapters. Since 1971, however, Continental V.L. has achieved nationwide status through the purchase of additional operating authority raising the number of nationwide carriers to 25.
grants of operating authority from the ICC and (3) the purchase of existing certificates from other carriers.

Given the relatively few nationwide carriers in the industry, one would expect the bulk of monopoly rents created by protective regulation to be reflected in the value of the largest certificates. The problem, however, lies in placing a value on a nationwide non-radial certificate since none has ever been sold. The approach taken here is to trace the acquisition of certificates by carriers who have gradually built up to nationwide status and use the sum of the prices paid for the certificates as a measure of the value of a nationwide non-radial certificate. This approach is expected to yield an underestimate of the true market value of a nationwide non-radial certificate for two reasons: (1) no carrier has ever purchased enough certificates which when combined would authorize operations into all 48 states and (2) typically the acquisition and tacking of a group of certificates will include the more restrictive radial certificates and the observance of inconvenient gateways. Thus, even if the group of purchased certificates were to authorize nationwide operations, the fact that the operations would not be completely unrestricted non-radial would yield an underestimate of the true sale value.
With the above qualifications in mind, the acquisition behavior of 9 of the 25 nationwide carriers was analyzed. The remaining nationwide carriers were excluded because either they had received large grandfather certificates or because they had been formed by consolidating the certificates and other assets of various carriers. The ICC motor carrier transfer docket number for each certificate purchased by each of the 9 carriers was found using the *Federal Register* for transfers back to 1954 and then *Traffic World* back to 1947. The original motor carrier finance dockets were then located and examined at the ICC to determine the selling prices of the 37 certificates purchased by the 9 carriers. Table 20 lists the carriers and the sum of the prices paid by them for all purchased authority.

The low sum paid by Neptune reflects the fact that the geographic scope of Neptune's purchased authority is significantly less than any of the other carriers. One indication of this is that Neptune does not have purchased non-radial authority for 20 of the 26 states east of the Mississippi River. Another qualification must be made with respect to Dean and Lyon. The geographic scope of the purchased authority of each of these two carriers is greater than for any of the other carriers in the sample although, except for Neptune, the sums paid are the lowest in the sample. Dean purchased most of
<table>
<thead>
<tr>
<th>Name of Carrier Traced</th>
<th>Aggregate Prices Paid For All Purchased Operating Certificates</th>
<th>Time Period in Which Purchases Were Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neptune World-Wide Moving</td>
<td>$125,907</td>
<td>1959</td>
</tr>
<tr>
<td>Pan Am (Dean) VL</td>
<td>176,982</td>
<td>1954-1961</td>
</tr>
<tr>
<td>Lyon VL</td>
<td>206,701</td>
<td>1947-1961</td>
</tr>
<tr>
<td>U.S. VL</td>
<td>270,087</td>
<td>1945-1961</td>
</tr>
<tr>
<td>Von der Ahe International</td>
<td>277,589</td>
<td>1960-1973</td>
</tr>
<tr>
<td>King VL</td>
<td>342,839</td>
<td>1954-1967</td>
</tr>
<tr>
<td>Continental VL</td>
<td>418,403</td>
<td>1971-1973</td>
</tr>
<tr>
<td>Fernstrom Storage and Van</td>
<td>462,977</td>
<td>1963</td>
</tr>
<tr>
<td>Republic Van and Storage</td>
<td>635,197</td>
<td>1952-1966</td>
</tr>
</tbody>
</table>

*Prices are expressed in 1971 dollars.

Source: Motor Carrier Finance Dockets, Interstate Commerce Commission, Washington, D.C.
its operating authority in 1954 from Knowles Van Lines (which included non-radial rights for 34 states and the D.C.)\textsuperscript{12} and Lyon purchased non-radial authority for most of the states west of the Mississippi River in 1947.\textsuperscript{13} Large certificate purchases by the other carriers in the sample were typically made more recently and even after adjustment for price level changes Dean and Lyon remain unrepresentative when compared to more recent experience. Excluding Neptune, Dean, and Lyon from the sample, the average aggregate sum paid by the other carriers is $401,182.

The prices paid by Continental V.L. give the best indication of the market values of large certificates for recent years. Continental purchased a certificate in 1971 for $145,000 (MC-F-11402) which authorized operations in various states west of the Mississippi River including non-radial authority for seven states. In 1973 it purchased the operating rights of Delcher Brothers' Storage Co. (MC-F-11786) which consisted of non-radial authority for 22 states east of the Mississippi River and Missouri, Louisiana, and Texas plus four radial certificates. In 1971 dollars these two purchases totaled $418,403 as shown in Table 20. Notice though that the average aggregate sum of $401,182 paid by the six

\footnote{\textsuperscript{12}ICC Motor Carrier Finance Docket No. MC-F-5608 (1954).}
\footnote{\textsuperscript{13}ICC Motor Carrier Finance Docket No. MC-F-3495 (1947).}
carriers in the sample is substantially the same as what Continental has experienced.

Table 21 shows that, although each of the six carriers has spent hundreds of thousands of dollars for operating rights, in no case does the purchased authority amount to all 48 continental states. The $401,182 figure then must be taken as an underestimate of the capitalized value of the monopoly rents to be derived from 48 state operating rights.

Table 21

<table>
<thead>
<tr>
<th>Name of Carrier</th>
<th>Number of States^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. VL</td>
<td>46</td>
</tr>
<tr>
<td>Von der Ahe International</td>
<td>39</td>
</tr>
<tr>
<td>King VL</td>
<td>44</td>
</tr>
<tr>
<td>Continental VL</td>
<td>41</td>
</tr>
<tr>
<td>Fernstrom Storage and Van</td>
<td>35</td>
</tr>
<tr>
<td>Republic Van and Storage</td>
<td>43</td>
</tr>
</tbody>
</table>

^aIncludes states which are served either through radial or non-radial authority or via tacking of certificates.

Source: Motor Carrier Finance Dockets, Interstate Commerce Commission, Washington, D.C.

A Simulated Completion of Purchased Operating Authority

In an attempt to obtain some notion of how much more valuable non-radial 48 state authority would be, a simulation was performed to fill out the operating authority of the 6 carriers considered above plus Neptune. Needed authority was pieced together for each
carrier using certificates (non-radial where possible) which had been sold recently and for which a selling price was available. A warning must be made at this point that the reliability of the results is reduced somewhat because the simulation cannot take into account the optimal amount of certificate overlap and it is not even obvious in which direction the results would be biased because of the overlap problem. The implicit assumption then is that any errors tend to cancel out.

An examination of the purchased certificates of each of the 7 carriers indicates that their non-radial authority tends to be concentrated in the states east of the Mississippi River. As Table 22 shows, the gaps in purchased authority tend to be among the 22 western states which are either not served at all or are served radially and often in a circuitous fashion.

Table 22

<table>
<thead>
<tr>
<th>Name of Carrier</th>
<th>Number of States^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. VL</td>
<td>0</td>
</tr>
<tr>
<td>Von der Ahe International</td>
<td>8</td>
</tr>
<tr>
<td>King VL</td>
<td>8</td>
</tr>
<tr>
<td>Continental VL</td>
<td>10</td>
</tr>
<tr>
<td>Fernstrom Storage and Van</td>
<td>10</td>
</tr>
<tr>
<td>Republic Van and Storage</td>
<td>7</td>
</tr>
<tr>
<td>Neptune World-Wide Moving</td>
<td>0</td>
</tr>
</tbody>
</table>

^aIncludes states west of the Mississippi River.

Source: Motor Carrier Finance Dockets, Interstate Commerce Commission, Washington, D.C.
Thus, the simulation for each carrier tended to focus on the completion of operating authority for the western states. As explained below, the purchase of such authority is expected to be relatively expensive implying that $401,182 may be a serious underestimate of the sale value of nationwide non-radial operating authority.

There are very few operating certificates which provide transcontinental access to such western states as California or between such states as California, Oregon, and Washington. This fact reflects the insignificant volume of such shipments in 1935 when grandfather certificates were granted and the reluctance of the ICC to allow new entrants into the western markets after the grandfather period. Together with the geographic shifts in population which have favored those markets, one would expect that the few existing certificates have become quite valuable.

Listed below are three "western" certificates and their selling prices:

14 The participating carrier and scope tariffs of the two industry rate bureaus show that, as of 1971, 34 carriers had non-radial authority for at least 20 of the states east of the Mississippi River. In contrast, there are only 19 certificates (all held by nationwide carriers) authorizing non-radial operations for California, Oregon, and Washington.
MC-FG-71552 (1970) $75,000
- Between Klamath Co., Oreg., on the one hand, and on the other Calif.

MC-F-11402 (1971) $145,000
- Between Utah on the one hand, and on the other Utah, Ida., part of Nev., and part of Wyo.
- Between points and places in Utah, Colo., and Mont.
- Between points and places in Utah, Wyo., Ida., Mont., Ariz., and part of Nev.

MC-F-11802 (1973) $533,000
- Between points and places in Calif., Oreg., and Wash.
- Between part of Oreg. on the one hand, and on the other Ida., and Nev.
From points in part of Mont. to points in Wyo., Colo., Ida., Utah, Oreg., and Wash.
From points in Wyo., Colo., Ida., Utah, Oreg., Wash., to points in Mont.
Between part of Mont. on the one hand, and on the other Minn., N.D., S.D., Wyo., Ida., Wash., and part of Mont.

The sale value of such certificates appears to be considerable when compared to a market value of only $150,000-200,000 for a non-radial certificate covering all 26 states east of the Mississippi River and the District of Columbia.  

As expected, the relatively high valued western certificates had a dramatic effect on the results of the simulated completion of purchased authority for the

---

sample carriers. The results of the simulation are presented in Table 23.

Table 23

ESTIMATED SALE VALUE OF FORTY-EIGHT STATE OPERATING AUTHORITY FOR SELECTED NATIONWIDE CARRIERS

<table>
<thead>
<tr>
<th>Name of Carrier</th>
<th>Estimated Sale Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>King VL</td>
<td>$613,674</td>
</tr>
<tr>
<td>U.S. VL</td>
<td>653,500</td>
</tr>
<tr>
<td>Von der Ahe International</td>
<td>673,064</td>
</tr>
<tr>
<td>Neptune World-Wide Moving</td>
<td>714,132</td>
</tr>
<tr>
<td>Continental VL</td>
<td>724,822</td>
</tr>
<tr>
<td>Republic Van and Storage</td>
<td>819,480</td>
</tr>
<tr>
<td>Fernstrom Storage and Van</td>
<td>924,071</td>
</tr>
</tbody>
</table>

Source: See text.

The average of the seven estimates is $731,735 or 1.8 times the initial estimate of the sale value of nationwide non-radial operating rights. This average is close to the total figure of $724,822 obtained by simulating the completion of Continental V.L.'s authority where Continental's experience was initially regarded as the most representative of current conditions in the certificate market.

As indicated on page 197, the $731,735 figure is still expected to be an underestimate to the extent that the 48 state purchased authority in each case was not completely unrestricted non-radial as it is for 14 of the nationwide carriers. This means in particular that the sample carriers would find that shipments
between many towns or cities can only be made indirectly by observing some gateway at a point where two certificates are tacked together. The requirement that a carrier observe its gateway restrictions can obviously give an advantage to a competitor who has authority to operate directly between those cities or towns. That the non-observance of gateways can sometimes result in substantial cost savings is evidenced by those carriers who illegally ignore their gateways in spite of the risk of incurring fines from the ICC. As reported in the September 15, 1973 issue of the Movers Journal, for example, Atlas V.L. was fined $15,000 for transporting HHG between Arizona, California, and Washington without traversing the required but inconvenient gateway of Colorado.

**Aggregate Monopoly Value**

With the above qualification in mind concerning the $731,735 figure, the 14 nationwide non-radial certificates represent a capitalized value of monopoly rents totaling $10.2 million. The average selling price of the 103 certificates included in the sample described in Table 19 was $10,387 (in 1971 dollars). If the 2807 less than nationwide non-radial certificates each had a market value of $10,387, the aggregate monopoly value of such certificates would be $29.2 million. Thus, the
monopoly value of the 14 nationwide non-radial certificates accounts for approximately one fourth of the total estimated monopoly value of $39.4 million.

It is worth noting that the 14 carriers accounted for 44% of total intercity freight revenues for HHG carriers in 1970 but, as just indicated, they account for only 25.9% of the total monopoly value. This finding is expected though since it is consistent with the previously stated argument that the $10.2 million figure probably understates the true market value of the nationwide non-radial certificates due to the gateway restrictions typically found in purchased nationwide authority.

If the ratio of intercity freight revenues to monopoly value (i.e. 18.1/1) for the 2807 certificates is applied to the 14 largest certificates, the implied monopoly value for these latter certificates becomes $23.0 million rather than $10.2 million. The sale value of a nationwide non-radial certificate using this approach would be $1.6 million. Adding $23.0 million and $29.2 million yields an estimate of the total monopoly value of all outstanding certificates of $52.2 million. That

\textsuperscript{16} Using ICC data on carriers for 1964 and the total industry revenue figure of $586.6 million from Table 2, the 14 nationwide non-radial carriers accounted for 44% of total industry operating revenue in 1964. This same percentage is assumed to have held in 1970 and is also assumed to apply to intercity freight revenues.
a figure of approximately $23.0 million is more appropriate is also suggested by a direct capitalization of the after tax profits contained in the annual reports of the 14 carriers. After tax profits in 1970 were $6,305,000. If a competitive rate of return of 6% of stockholders' equity is subtracted out, after tax profits become $2,143,000. Assuming an interest rate of 10%, the capitalized value of the after tax profits is $21.4 million.

The estimated monopoly value of $52.2 million for all outstanding certificates represents a redistribution of income in favor of the initial owners of certificates. Whether or not this redistribution from consumers to producers is desirable in and of itself depends upon one's point of view. The $52.2 million figure does, however, enable one to clearly identify those who have gained and those who have lost from the regulation of HHG carriers. That the direction of the redistribution is toward certificate owners is of course consistent with the producer protection hypothesis.

A capitalized value of $52.2 million probably seems small when compared with industry revenue of $910 million in 1971. It would also appear to be a much smaller figure than that implied by the substantial

17 Stockholders' equity was $69,373,000 in 1970.
monopoly markups determined in Chapter IV. As argued in the introduction to this chapter, however, certain imperfections in protective regulation and the nature of the regulatory process itself would be expected to limit the extent of monopoly gains expected by the industry.

Referring to equation (3) on page 189, some factors tend to cause cost inflation (i.e. raise LAC) in the industry and thereby lead to small profits despite monopoly pricing. Three factors of this type have been identified: (1) the absence of quotas and pooling implies that cartel output is not produced at minimum cost, (2) the costs of complying with regulation, and (3) the inability to suppress all forms of non-price competition including advertising and sales promotion.

Other factors tend to reduce q* or increase r in equation (3) and thereby reduce the value of a certificate. Market encroachment via interlining, for example, directly reduces q* for each licensed carrier in that market area. The interest rate r, which includes any risk premium, will vary inversely with certificate owners' perception of the degree of protection that the ICC is offering to the industry. In this context, the ICC's recent grant of several nationwide certificate
extensions would be expected to have caused significant upward adjustments in $r$ by actual and prospective owners thereby reducing the sale value of those certificates. All of these factors together then explain why the capitalized value of expected monopoly profits appears small despite direct evidence that rates are significantly above competitive levels.

V. Conclusion

It has been estimated that the capitalized value of monopoly rents accruing to the owners of all outstanding HHG carrier certificates totals $52.2$ million i.e. regulation has had the effect of redistributing income from consumers to producers. In addition, given the evidence of Chapter IV that regulated inter-state rates are substantially above cost based or competitive levels, regulation has caused a misallocation of resources for this industry with a resulting welfare loss being imposed on society.

The policy implication of this study is that serious consideration should be given to deregulating the HHG carrier industry. This would include, in particular, abolishing entry controls and rate regulations. As argued in the conclusion to Chapter III, fears that an unregulated industry would lead to either a natural monopoly situation or destructive competition have no
sound economic basis.

Deregulation would be expected to benefit society in several ways. Most noticeable would be the downward pressure on rates created by competition among existing firms or through the threat of potential entry. It is expected that the number of competitors would be large enough on particular routes or entry barriers low enough to make the probability of successful collusion low. It would still be desirable, however, to end the industry's antitrust immunity.

As rates fell, the redistribution of income from consumers to producers would stop as excess profits would tend to be eliminated. This in turn implies that the value of operating certificates would fall to zero. Society may decide on the basis of equity considerations that certificate owners be compensated for these windfall capital losses particularly those holding non-grandfather certificates i.e. those who purchased certificates and paid a price reflecting the discounted present value of future monopoly profits and thus are currently earning only normal returns.

Increased competition in an unregulated industry would also serve to eliminate the inefficient HHG carriers (whether large or small) whose survival was dependent on the high rates offered by protective
regulation. Costs in general would be expected to be lower following deregulation due to (1) the elimination of gateways, (2) the freedom from regulation and the compliance costs it involves, and (3) a shift in emphasis from non-price competition, which can become excessive under regulation, to rate competition.

Finally, increased competition in the absence of rate regulation would alter the structure as well as the level of rates. On the one hand, increased competition would threaten discriminatory rate structures; at the same time freedom from rate regulation would permit experimentation with peak demand pricing leading to a more efficient use of capacity throughout the year.

There are, of course, problems that must be dealt with before deregulation could be achieved such as overcoming vested interests and whether or not deregulation would be gradual or rapid and partial or total. Nevertheless, the economic arguments for deregulation are persuasive and the probability of them prevailing has increased in recent years.
For present purposes, there are three relevant sections of the Household Goods Carriers' Bureau interstate tariff. Interstate shipments originating in the Baltimore area (Baltimore city and Baltimore county) and moving 125 miles would be covered by Section III of the tariff. Interstate shipments originating in the Maryland suburbs of Washington D.C. (Montgomery and Prince Georges counties) and moving 125 miles would be covered by the higher rates in Section V. In addition, Section I of the tariff requires that a charge of 30¢/hundredweight for shipments originating in the Baltimore area and 50¢/hundredweight for shipments originating in the Maryland suburbs of Washington be added to the basic rates of Sections III and V respectively.

According to the Section III rates of Supplement No. 31 of Household Goods Carriers' Bureau Tariff No. 143-A which became effective April 9, 1973, the rate for a 7000 pound shipment moving 125 miles is $6.30/cwt. or $441. But since 7000 pounds is beyond the 6667 pound
breakpoint, the shipment would move as 8000 pounds at
the lower rate of $5.25/cwt. or $420. The corresponding
Section V rate for shipments originating in the Mary­
land suburbs of Washington is $6.15/cwt. Supplement
No. 34 to Tariff 143-A became effective June 30, 1973
and raised the $5.25 rate to $5.46 and the $6.15 rate
to $6.40. The new rates were still in effect during
September 1973. Adding the Section I surcharge of 30¢/cwt. to $5.46/cwt. and 50¢/cwt. to $6.40/cwt. yields the
following transportation charges as indicated in Table 24.

Table 24

INTERSTATE TRANSPORTATION CHARGE FOR A 7000 POUND-
125 MILE SHIPMENT: SEPTEMBER 1973

<table>
<thead>
<tr>
<th>Point of Origination</th>
<th>Transportation Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltimore</td>
<td>$461</td>
</tr>
<tr>
<td>Maryland Suburbs of</td>
<td>552</td>
</tr>
<tr>
<td>Washington D.C.</td>
<td></td>
</tr>
</tbody>
</table>

Source: See text.

On January 3, 1974, Household Goods Carriers' Bureau Tariff No. 155-A became effective cancelling
Tariff 143-A. Supplement No. 1 to Tariff 155-A went into effect February 2, 1974 and raised the Section III
rate for a 7000 pound-125 mile shipment to $5.98/cwt. and the Section V rate became $7.01/cwt. Adding the Section
I surcharges of 30¢/cwt. and 50¢/cwt., respectively, and a 6% fuel surcharge granted by the ICC, the resulting
transportation charges are shown in Table 25. These

Table 25
INTERSTATE TRANSPORTATION CHARGE FOR A 7000 POUND-125 MILE SHIPMENT: FEBRUARY 1974

<table>
<thead>
<tr>
<th>Point of Origination</th>
<th>Transportation Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltimore</td>
<td>$533</td>
</tr>
<tr>
<td>Maryland Suburbs of</td>
<td></td>
</tr>
<tr>
<td>Washington D.C.</td>
<td>637</td>
</tr>
</tbody>
</table>

Source: See text.

rates were still in effect during March, 1974.
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