

ECONOMIC AND LEGAL IMPLICATIONS
OF LIQUID ASPHALT PRICING
IN OKLAHOMA,
1961-1965

By

DALE RODNEY FUNDERBURK

Bachelor of Arts
East Texas State University
Commerce, Texas
1964

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1968

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF PHILOSOPHY
May, 1971

OKLAHOMA
STATE UNIVERSITY
LIBRARY
AUG 11 1971

ECONOMIC AND LEGAL IMPLICATIONS
OF LIQUID ASPHALT PRICING
IN OKLAHOMA,
1961-1965

Thesis Approved:

Larkin Warner

Thesis Adviser

Richard H. Lettman

Wayne A. Meinhart

Joseph M. Jordon

D. D. Burhan

Dean of the Graduate College

788273

ACKNOWLEDGMENTS

The writer wishes to express his deep appreciation to his dissertation committee, Drs. Larkin B. Warner, Chairman, Richard H. Leftwich, Joseph M. Jadow, and Wayne A. Meinhart. Special appreciation is due Dr. Warner for his tireless assistance and guidance. Also, Dr. Leftwich's specialized knowledge of the case around which this study is centered proved invaluable.

Sincere appreciation is also extended to Mr. Burck Bailey of the Oklahoma City law firm Fellers, Snider, Baggett, Blankenship and Bailey. His cooperation in providing office space to the writer, as well as making available the trial transcript and exhibits, and his willingness to give freely of his time greatly facilitated the completion of this dissertation.

The constructive and unselfish way in which these individuals made available their services helped to make a long and difficult task a pleasant experience.

TABLE OF CONTENTS

Chapter	Page
I. PROBLEM, BACKGROUND AND PROCEDURE	1
II. MARKET STRUCTURE	8
The Product	8
Supply	10
Technology, Costs and the Supply of Asphalt	18
Demand	24
Methods and Terms of Sale	27
III. CONDUCT AND PERFORMANCE	29
Pricing and Sales to the Oklahoma Highway Department	30
Intermarket Sales Policies	65
Sales to Private and Out-of-State Users	72
Conclusions on Pricing and Sales to and Between the Various Markets	75
IV. ANALYSIS OF THE CASE AND CONSIDERATION OF THE HYPOTHESES	77
Parties to the Suit and Charges	78
Factors Leading to the Filing of Charges	79
Development of the State's Case	81
Nonconspiratorial Explanation of Respondents' Pricing and Sales Policies	108
Consideration of Hypotheses	118
V. POLICY IMPLICATIONS	126
National Policy Considerations	126
Implications for the Litigants	135
VI. SUMMARY AND CONCLUSIONS	139
BIBLIOGRAPHY	142

LIST OF TABLES

Table	Page
I. Ownership, Location, and Capacities of Liquid Asphalt Producers in Oklahoma, 1961-1965	13
II. Ownership, Location, and Capacities of Liquid Asphalt Producers in Kansas, 1961-1965	16
III. Tabular Interpretation of Figure 4	52
IV. Asphalt Sold by Kerr-McGee, Apco, and Riffe Outside Oklahoma, October, 1961 to October, 1965	86
V. Asphalt Bids to State of Minnesota From Selected Refineries in Kansas and Oklahoma, October, 1961 to October, 1965	88
VI. Asphalt Bids to State of South Dakota From Selected Refineries in Kansas and Oklahoma, October, 1961 to October, 1965	89
VII. Asphalt Bids to State of Iowa From Selected Refineries in Kansas and Oklahoma, October, 1961 to October, 1965	90
VIII. Asphalt Bids to State of Missouri From Selected Refineries in Kansas and Oklahoma, October, 1961 to October, 1965	91
IX. Asphalt Bids to State of Nebraska From Selected Refineries in Kansas and Oklahoma, October, 1961 to October, 1965	92
X. Asphalt Bids to State of Wisconsin From Selected Refineries in Kansas and Oklahoma, October, 1961 to October, 1965	93
XI. Asphalt Bids to State of Colorado From Selected Refineries in Kansas, October, 1961 to October, 1965	94

LIST OF FIGURES

Figure	Page
1. Location of Oklahoma Asphalt Facilities, 1961-1965	12
2. Location of Kansas Asphalt Facilities, 1961-1965	17
3. Location of Firms Along a Linear Market Span	50
4. Market Boundaries Corresponding to Alternative F.O.B. Refinery Prices	51
5. Profit Resulting From Alternative Pricing Policies	54
6. Profitability of Unilateral Price Reduction: Significant Transportation Costs	56
7. Profitability of Unilateral Price Reduction: Lower Transportation Costs	56
8. Profitability of Unilateral Price Reduction Under Conditions of Price Discrimination	58
9. Market Boundaries for Firms Situated in a Nonlinear Market Span	60
10. Pricing and Allocation of Sales to Various Markets under Conditions of Price Discrimination	68
11. A Geographic Price Discrimination Model	71

CHAPTER I

PROBLEM, BACKGROUND AND PROCEDURE

A major objective of antitrust policy is that of influencing market performance.¹ In industries where a high degree of competition is feasible, a policy which increases competition may be expected to lead to greater efficiency, thereby improving performance. An interesting feature of American antitrust policy is that while it is undoubtedly intended to influence performance, the antitrust statutes tend to be highly conduct oriented. One difficulty inherent in this approach is that market conduct is not always easy to ascertain. As a consequence,

¹Throughout this study, references to the terms market structure, market performance, and market conduct will be as defined by Joe Bain, Industrial Organization, (New York, 1959), pp. 7-9. "Market structure refers . . . to the organizational characteristics of the market . . . [Especially] those characteristics which determine the relations of sellers in the market to each other, of the sellers to the buyers, and of sellers established in the market to other actual or potential suppliers of goods, including potential new firms which might enter the market. In other words, market structure for practical purposes means those characteristics of the organization of a market which seem to influence strategically the nature of competition and pricing within the market."

Market conduct "refers to the patterns of behavior which enterprises follow in adapting or adjusting to the markets in which they sell (or buy)."

Market performance "refers to the composite of end results in the dimensions of price, output, production costs, selling costs, product design, and so forth, which enterprises arrive at in any market as the consequence of pursuing whatever lines of conduct they espouse."

if firms in an industry are suspected of having deviated from the competitive norm, it may be necessary for the courts to attempt to infer conduct from observed market structure and performance. An obvious danger is that the courts might make an inaccurate inference. In order to make enlightened inferences concerning market conduct, one should be fairly knowledgeable of factors affecting pricing and output policies of firms under various market conditions. There is some room for doubt that the average jury possesses such a high degree of economic sophistication. Neither is it certain that a jury will acquire this needed sophistication during the course of a trial. Indeed it seems quite possible that under certain market conditions, a firm which is behaving independently, in a perfectly legal, profit seeking fashion runs a serious risk of antitrust prosecution. Further, it appears possible that the same firm may be found guilty of an antitrust violation on the basis of evidence which can be adequately explained with orthodox economic theory--and still no illegal conduct involved.

One industry which has frequently been accused of behavior different from that which could be expected under freely competitive conditions is that of liquid asphalt. In a 1914 case, the State of Georgia charged liquid asphalt suppliers with combining to fix prices and to suppress competition in the sale of asphalt to the State Highway Department. In that landmark decision, the United States Supreme Court rules that a state does qualify as "any person who shall be injured" in the wording of section 7 of the Sherman Act, and is thereby eligible to receive treble damages under the Act.² More

²State of Georgia v. Evans et al., 316 U.S. 159.

recently, several states have followed Georgia's lead, and proceedings have been initiated against asphalt suppliers in cases in Massachusetts, Florida, California, Iowa, Kansas, Missouri, New Mexico, and Oklahoma.³ Principal charges in these cases have been that suppliers conspired to fix prices and/or allocate market territories. One reason that there has been such interest in the area of asphalt pricing is that large quantities of liquid asphalt are purchased each year by state and local governments for use on highways.

During the years 1961 through 1965, more than 114 million tons of petroleum asphalt were sold in the United States. Of that amount, almost 85 million tons, or 73.6 per cent of the total, were for paving use.⁴ Indeed, in recent years the paving market has been consuming a fairly constant three-fourths of the product. A major portion of this is purchased by state and local governments. Between October 1961 and October 1965, the State of Oklahoma alone made direct purchases of more than 52 million gallons of liquid asphalt for paving use. The State paid over \$1.8 million for the asphalt. Indirect purchases through private paving contractors amounted to about twice that quantity and dollar amount.⁵

Because such large quantities of asphalt are consumed each year by the states, the purchase of this material is of major consequence to

³These cases are reported in the various issues of the Trade Regulation Reporter.

⁴Petroleum Facts and Figures (New York, 1967 ed.), p. 229 and 233. One ton of asphalt is the equivalent of 5.5 barrels.

⁵State of Oklahoma v. Allied Materials Corporation, et al., Plaintiff Exhibit No. 99.

state governments. As a result, they tend to be very mindful of pricing policies of asphalt suppliers. Indeed, in their zeal to minimize the cost of the product, it seems possible that states may interpret sales and pricing policies of liquid asphalt suppliers in such a way as to see anticompetitive conduct where it does not in fact exist. For example, if a state detects an absence of price competition among firms, failing to find direct evidence of an express anticompetitive agreement, the state may try to prove collusion by circumstantial evidence. This, of course, is a perfectly valid legal technique. A. D. Neale, a noted British authority on American antitrust laws states:

. . . there are in practice two main lines of argument by which a circumstantial proof of collusive price-fixing may be built up; sometimes both lines may be used in the same case. One starts from the existence of an agreement--any trade association activity reflects an agreement of some kind--and seeks to show that the agreement, even though not expressly concerned with price-fixing, necessarily involves a significant restriction of price-competition.

The alternative line of argument starts from the absence of price-competition and seeks to show that this state of affairs could not be maintained without collusion For this second line of argument various types of evidence are important. Uniformity of prices among ostensible competitors is only the starting-point. It is usually important to show that uniformity is maintained when diversity would be expected.⁶

Neale's latter point suggesting that absence of price competition alone is not per se proof of collusive price fixing must be emphasized.⁷ And as Neale recognizes, to prove a conspiracy by circumstantial

⁶A. D. Neale, The Antitrust Laws of the United States of America (New York, 1968), p. 49.

⁷While it is true that price fixing (along with group boycotts, agreements to divide markets, and tie-in sales) is illegal per se, this is very different from ruling that price uniformity is per se proof of price fixing.

evidence, it is important to show that the observed price behavior is different from that which should be expected under freely competitive conditions. This expected market behavior depends, of course, on relevant characteristics of the product and market in question. This study centers around the testing of two hypotheses pertinent to this issue. Formally stated, they are: 1) Because of some special market conditions peculiar to the liquid asphalt industry, firms in that industry are particularly susceptible to antitrust involvement; and, 2) Because of these same market conditions, an asphalt supplier may well be found guilty of an antitrust violation when in fact the firm's conduct conforms to that which could be expected of an independently-acting, profit-maximizing firm.

To test these hypotheses, the study focuses on the Oklahoma case, State of Oklahoma v. Allied Materials Corporation, et al. This particular case was chosen for two principal reasons. First, this case is perhaps the most important of the recent asphalt cases in terms of economics. In it, the State of Oklahoma attempted to prove that a conspiracy existed among major asphalt suppliers. Being a case in which market conduct could only be inferred on the basis of circumstantial evidence and economic theory, the line of attack taken by the State contained elements of each approach mentioned by Neale above. The primary emphasis, however, was on the second alternative. A second reason for selecting this particular case is that, unlike most of the other cases in which the defendants either entered nolo contendere pleas, or else there was direct evidence of a collusive agreement, the Oklahoma firms chose to fight the charges in court. As a result, almost

5000 pages of testimony generated evidence which makes it possible to examine this case more closely than is possible in the other cases.

The study proceeds as follows: Chapter II deals with certain aspects of market structure. An attempt is made to describe those factors which might be expected to influence significantly the nature of pricing and competition by Oklahoma asphalt suppliers. First, an introduction to the nature and uses of the product is included. This is followed by a brief discussion of technological factors governing the production of asphalt. Closely related to this is a description of cost of production considerations. Next, data are presented concerning the classes of buyers of Oklahoma-produced liquid asphalt, the nature of demand for the product, and potential as well as established suppliers in the market area. Other factors, such as the method by which contracts are let, and especially spatial dimensions of the market are analyzed.

Once the basic market characteristics are described, an attempt is made to explain with economic theory the behavior one might expect of firms operating under such market conditions. This is undertaken in Chapter III. It should be emphasized, however, that the function of Chapter III is not to attempt to explain definitively the actual conduct of Oklahoma asphalt suppliers between October, 1961 and October, 1965. Such is the function of the courts, and to say that the court was either correct or incorrect in the Oklahoma case is neither appropriate nor necessary for the development of this study. To test the hypotheses in question, it is only necessary in Chapter III to explain the behavior one could logically expect of firms operating under the conditions described in Chapter II. The approach used here is to note incentives

of firms to react in one way or another. It is important to realize, though, that the mere existence of an economic incentive for firms to behave in a certain fashion does not necessarily mean that they will so behave. Thus Chapter III should be interpreted only as an economic analysis of expected behavior of Oklahoma asphalt suppliers.

Chapter IV deals with the specifics of the Oklahoma case. The allegations of the State, the factors behind the State's decision to initiate the proceedings, its presentation of the case, and the defense are presented. This information is taken directly from the trial transcript. Finally, the information obtained in the first four chapters is analyzed in an attempt to confirm or reject the two hypotheses.

In Chapter V attention is turned to matters of public policy. There are some important policy implications which can be drawn from this study. Emphasis in Chapter V is placed on national policy implications, but the case also holds some implications for the parties directly involved. Chapter VI presents the summary and conclusions.

CHAPTER II

MARKET STRUCTURE

Before one may intelligently analyze expected pricing and output policies of firms in a particular industry, he must have at his disposal certain information about that industry. The purpose of this chapter is to provide such information by examining those market characteristics which might be expected to influence significantly the nature of competition and market behavior by the firms in question. Specifically, the task at hand is to analyze the market structure faced by Oklahoma asphalt suppliers.

The Product

Asphalt is defined by the American Society for Testing and Materials as "a dark brown to black cementitious material, solid or semisolid in consistency, in which the predominating constituents are bitumens which occur in nature as such or are obtained as residua in refining petroleum."¹ Asphalt is used in roofing, floor covering, paints, auto brake lining, as insulation for wires, fiber conduits and

¹L. W. Corbett, Arnold J. Hoiberg, and R. B. Lewis, "Asphalt," Encyclopedia of Chemical Technology (New York, 1963), II, p. 762.

refrigerators, and in various other industrial uses. Its primary use, however, and the one of concern here, is that of highway construction and maintenance. Some of the properties of asphalt that cause it to be so extensively used as a paving material are that it is a powerful cement, readily adhesive, highly waterproof, and durable.² While asphalt is a solid or semisolid at normal atmospheric temperatures, it can be used as a paving material only when in liquid form. This transformation from solid to liquid may be accomplished by blending the asphalt with other, lighter petroleum products and heating. These blends, or "cutbacks" as they are called, vary according to the type and amount of diluent used. Once cut back and heated, the liquid asphalt may be applied to the road where the distillate evaporates, leaving behind a cement-like asphalt.

There are three general types of liquid asphalt which differ mainly in the diluent used. These are SC (slow-curing), MC (medium-curing), and RC (rapid-curing). RC type contains a naphtha or gasoline-type diluent of high volatility. MC contains a kerosene-type diluent of relatively high volatility, and the seldom used SC variety contains a relatively low volatility oil. In each instance the diluent is applied to an asphaltic base substance, asphalt cement.³ This raw asphalt cement (AC) is a fourth form in which the product is sometimes sold. Within each of the types, there are different grades, depending on the amount of diluent used. Each state establishes specifications which each type and grade must meet. While these specifications may vary

²Asphalt Handbook (New York, 1947), p. 7.

³Herbert Abraham, Asphalt and Allied Substances (6th ed., Princeton, 1962), III, p. 124.

from state to state, it should be realized that within grades, asphalt is a homogeneous product. One batch of asphalt which meets state specifications is identical to any other batch which meets that same state's specifications.⁴ MC is the principal form in which the product is sold for road repair use and therefore receives the primary emphasis in this study.

Supply

Suppliers

There are eight companies that sell liquid asphalt in Oklahoma. They are: Allied Materials Corporation, Apco Oil Company, Inland Asphalt, Inc., Kerr-McGee Oil Company, Monarch Refineries, Inc., Phillips Petroleum Company, Riffe Petroleum Company, and Sunray DX Oil Company. Five of the firms, Allied, Apco, DX, Kerr-McGee, and Phillips produce their own asphalt. Riffe, Inland and Monarch produce no asphalt, but market for others, or operate as "jobbers." Riffe has marketed the asphalt produced by the Bell Oil and Gas Refinery of Ardmore, Oklahoma since 1957. In 1958, Riffe began marketing all the asphalt refined by Champlin's Ardmore and Enid, Oklahoma refineries. Inland, which during its corporate history has also been known as the Baxter Land Corporation and the Redstone Asphalt and Petroleum Company, operates an asphalt blending facility located in Ponca City, Oklahoma. Inland purchases the residual materials and further processes them into

⁴That is, one load of Oklahoma MC-2 is identical to every other load of Oklahoma MC-2. But it may (and in fact usually does) differ from a Kansas MC-2. For example, throughout the time covered by the suit, Oklahoma AC-3 was not acceptable to the State of Kansas as an AC-3.

specification asphalts. Actually, Riffe and Inland should not be considered separate companies, as both are wholly-owned subsidiaries of CBK Industries, Inc., of Kansas City, Missouri. Monarch is a small jobber which markets for the Trumbull Oil Company which has a refinery in Oklahoma City.⁵

These eight firms operate ten asphalt producing and/or storage plants in the State of Oklahoma. Figure 1 shows the geographic location of these plants over the State. The significance of this geographic distribution is discussed in Chapter III. Table I provides information as to ownership, production capacities, and storage capacities of the facilities. Two points need to be noted here to help clarify Table I. First, two of the Oklahoma refineries, Champlin and Sunray DX, have facilities for producing coke in lieu of asphalt. Truman Rucker, a member of the Sunray DX Board of Directors and also their legal counsel, testified that his company normally produces asphalt during the spring and summer, and then switches to coke production during the fall and winter months when there is little or no road work being done.⁶ Table I gives coking capacity in tons for these firms. Second, the table does not make sufficiently clear the critical nature of storage capacities. Actually, inadequate storage facilities

⁵The corporate history of some of these firms is quite involved. Several of the firms underwent name and/or ownership changes both during and after the time period covered in the Oklahoma case. Also, some of the refineries have changed hands since the State of Oklahoma initiated proceedings. Where these changes are of no real significance relative to this study, they have been ignored.

⁶State of Oklahoma v. Allied Materials Corporation, et al., Trial Transcript, I, pp. 48-49.

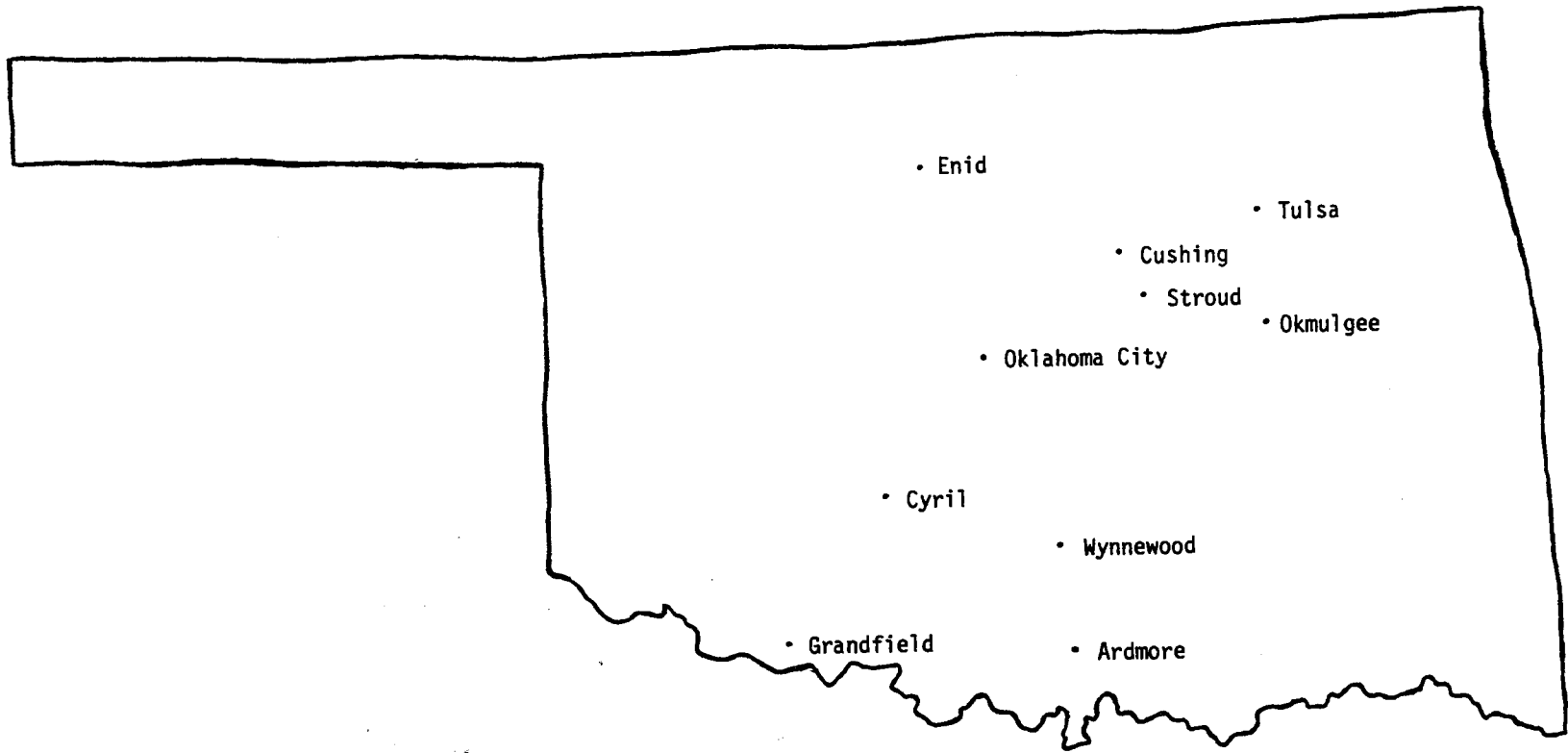


Figure 1. Location of Oklahoma Asphalt Facilities, 1961-1965.

TABLE I
OWNERSHIP, LOCATION, AND CAPACITIES OF LIQUID ASPHALT PRODUCERS IN OKLAHOMA
1961-1965

Owner	Plant Location	Daily Crude Refining Capacity (b/cd)*	Asphalt Producing Capacity (Coke) (b/sd)*	Storage Capacity (Barrels)
1. Allied Materials	Stroud	4,500	600	
2. Apco	Cyril	10,000	1,330	186,700
3. Apco	Grandfield	**		
4. Bell	Ardmore	25,000	3,500	
5. Champlin	Enid	34,000	1,500 (150 tons)	
6. Kerr-McGee	Cushing	14,500	400	3,250,000
7. Kerr-McGee	Wynnewood	24,000	3,200	15,000,000
8. Phillips	Okmulgee	18,600	600	
9. Sunray DX	Tulsa	84,000	1,500 (150 tons)	
10. Trumbull	Okla. City	1,400		

*Crude capacities are expressed in barrels per calendar day. Asphalt capacities are in barrels per steam day. Calendar day figures may be converted to steam day equivalents by multiplying by 0.9.

**No asphalt was produced at Grandfield. Storage facilities there were used to store part of Bell's Ardmore production.

Source: This table was compiled on the basis of testimony by company officials in State of Oklahoma v. Allied Materials, et al., plus data obtained from "Survey of Operating Refineries in the United States" published annually by the Oil and Gas Journal; and Moody's Industrial Manual.

seems to be a persistent problem with which asphalt producers must live.⁷

Asphalt Refiners Association

A final note concerning the suppliers which should be included here deals with the existence of an Asphalt Refiners Association. This association was formed in 1954 and included all the Oklahoma asphalt suppliers listed above. According to Truman Rucker, previously identified, this association was formed for the sole purposes of promoting asphalt and combating the Portland Cement Association. Portland cement is, of course, asphalt's major competition as a paving material. The contention of Rucker and all members of the Asphalt Refiners Association is that it played no role in pricing and sales policies of its members.⁸ The State, on the other hand, contended that the Association is the instrument through which its members conspired to fix prices and allocate market territories. Whether or not the existence of this Association is of any significance relative to this case depends, of course, on which of the two contentions is fact. Without speculating on that issue here, it should simply be noted that a corporation is not legally barred from contact with its competitors. By court decisions, a competitor

⁷See, for example, the testimony of Ray L. Felts, Executive Vice President for Riffe. *Ibid.*, XXXIII, pp. 3546-3547. Frank C. Love, President of Kerr-McGee also emphasized heavily the persistent inadequacy of storage facilities. *Ibid.*, XXX, pp. 3256.

⁸*Ibid.*, I, p. 58.

. . . may join trade associations in which members meet, statistics on past transactions are compiled, and procedures for detecting antisocial practices, such as fraud, are established. He may likewise participate in advertising programs and utilize common facilities organized by his competitors to promote the best interests of his industry, where access to these joint projects is available to all members of the industry.⁹

Thus the mere existence of the Asphalt Refiners Association should not be taken as per se evidence of illegality.

Potential Suppliers

Potential market entrants, as well as the actual suppliers, may be expected to influence the nature of competition within a market. While there could conceivably be a large number of possible suppliers of liquid asphalt for the Oklahoma Highway Department from the surrounding states, only those from Kansas are considered here. The reason for so limiting this section is that it is the Kansas refineries which were named by the State of Oklahoma as parties to the conspiracy to allocate market territories.

There are nine asphalt producing refineries in the State of Kansas. These include two refineries in El Dorado, one owned by Skelly Oil Company, the other by American Petrofina; a Mobil refinery in Augusta; two Consumers Cooperative refineries, one in Coffeyville, the other in Phillipsburg; a Phillips refinery in Kansas City; the Century Refinery in Shallow Water; an Apco refinery in Arkansas City; and until late 1963, a Derby Refining Company plant in Wichita. Table II gives the

⁹Jerrold G. Van Cise, The Federal Antitrust Laws (Washington, D.C., 1967), p. 31. Van Cise cites the cases from which each of these decisions is taken.

productive capacities of these refineries, and Figure 2 shows the location of each plant.

TABLE II
OWNERSHIP, LOCATION, AND CAPACITIES OF LIQUID
ASPHALT PRODUCERS IN KANSAS, 1961-1965

Owner	Plant Location	Crude Refining Capacity (b/cd)	Asphalt Producing Cap. (b/sc)	Coke Capacity (tons)
American Petrofina	El Dorado	21,400	2,800	
Apco	Arkansas City	19,500	1,300	
Century	Shallow Water	3,600	800	
Consumers Cooperative	Coffeyville	26,000	1,200	250
Consumers Cooperative	Phillipsburg	14,500	1,975	
Derby	Wichita	21,500	2,300	150
Mobil	Augusta	45,000	7,000	
Phillips	Kansas City	70,000	3,000	
Skelly	El Dorado	48,000	3,000	500

Source: "Survey of Operating Refineries in the United States," Oil and Gas Journal, Annual Reports.

While all the above were mentioned as co-conspirators in the litigation, not all can be considered serious contenders for the Oklahoma market. For example, the Consumers Cooperative refinery in Phillipsburg is located in north central Kansas, some 200 miles above the Oklahoma line. The Coffeyville plant did not even produce

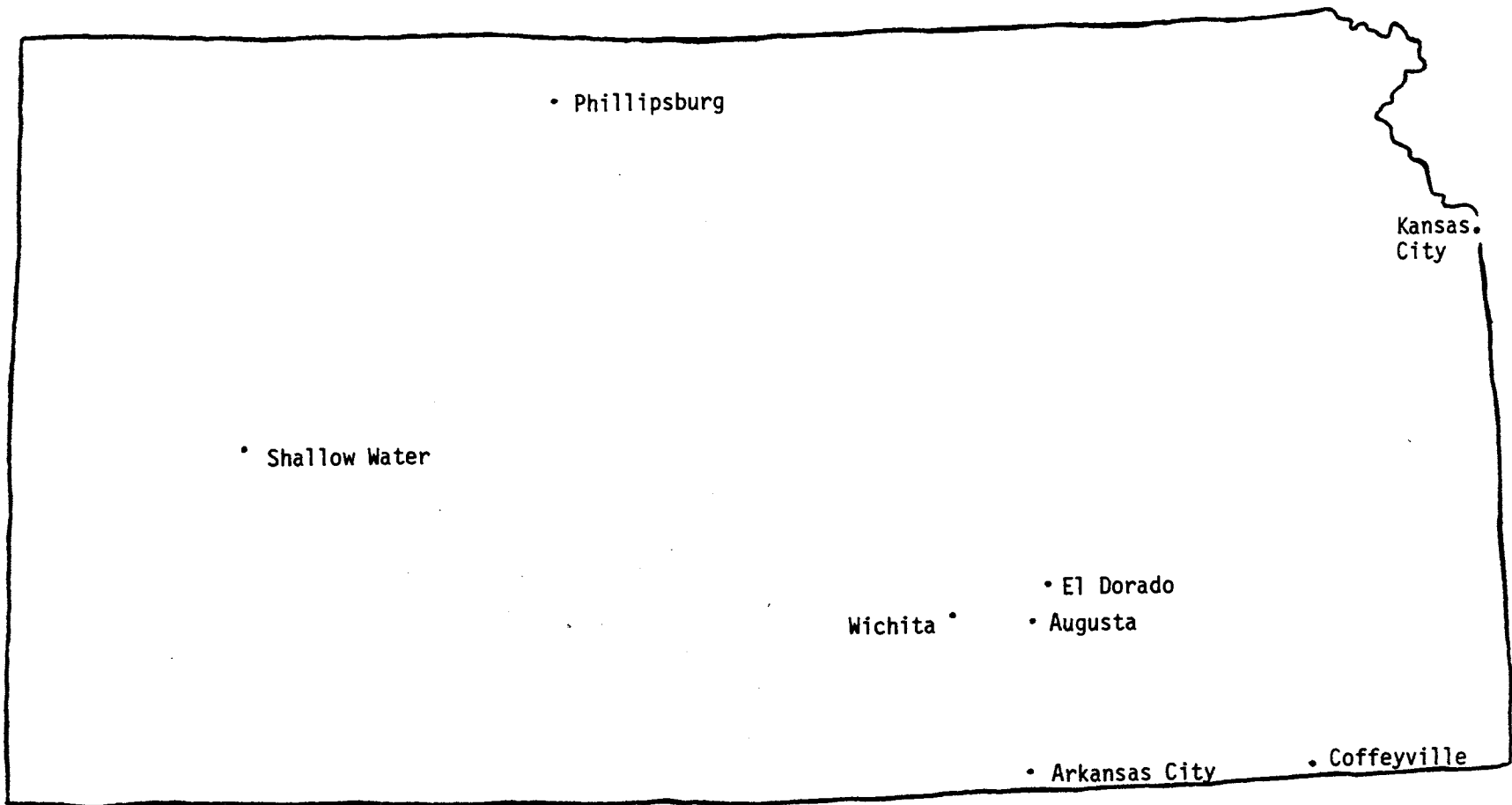


Figure 2. Location of Kansas Asphalt Facilities, 1961-1965.

specification asphalt during the time covered by the suit. The Phillips refinery in Kansas City lies over 150 miles away from the Oklahoma market. As such, it is much better situated to bid into Missouri, a deficit asphalt producing state, than into Oklahoma, a surplus state. Some of the other refineries, however, must be considered seriously as potential entrants into the Oklahoma market. Among these is the Apco refinery in Arkansas City, which lies less than ten miles north of the Oklahoma line. The Skelly and American Petrofina refineries in El Dorado lie about 65 miles above the Oklahoma-Kansas border. And the large Mobile refinery, which produces about 80 million gallons of asphalt per year, is located in Augusta which is approximately 45 miles away from Oklahoma. These firms definitely should not be ruled out of contention for the Oklahoma market solely on geographic considerations.

While it is a bit premature to fully develop this point, it must be noted that the distance from the market is significant for reasons other than the obvious one of transportation costs. For one thing, the asphalt is sold hot and is transported hot by Oklahoma Highway Department trucks to the job site for immediate use with no reheating. Also, the Highway Department retains the privilege of returning the asphalt in case inclement weather should occur between the time of pick up and use. All three of these factors tend to reinforce the competitive disadvantage of firms some distance from the market.

Technology, Costs, and the Supply of Asphalt

Refining technology places significant limitations on the ability of refiners to control the supply of asphalt. The petroleum refiner

normally does not have the independent choice of producing more or less asphalt. The amount of asphalt produced depends largely on the size of the throughput of the refinery. Actually, asphalt is a residuum of the refining process, coming off the bottom of the barrel. By volume, it may vary from less than 5 per cent to more than 75 per cent of a barrel of crude, depending on the nature of the crude and technology.¹⁰ In Oklahoma the asphalt content per barrel of crude runs at near 10 per cent, while as a national average, McLean and Haigh place the figure at nearer 3 per cent.¹¹ Some refineries have the option of producing coke in lieu of asphalt, but as is shown in Table I, that option is a very limited one in Oklahoma.

While asphalt is only one of many products obtained from the petroleum refining process, it does not meet the standard economic definition of a "truly joint" product. That term is normally reserved for products which must be produced together and only in constant proportions.¹² Asphalt can more accurately be classified as a "by-product". Accountants term as by-products "the one or more products of

¹⁰W. L. Nelson and Suresh Patel, "How Much Asphalt in Crude Oil?" Oil and Gas Journal, February 17, 1964, pp. 120-123, and W. L. Nelson, "Asphalt in Various World Crude Oils," Oil and Gas Journal, December 7, 1964, pp. 170-171. It also should be noted that while not all asphalt is obtained through the petroleum refining process, today petroleum-derived asphalt represents over 90 per cent of total asphalt and asphalt products sold in the United States. Corbett, Horberg and Lewis, p. 766. Further, there are only a few minor occurrences of pure asphalt found in Oklahoma, and none of these has any commercial importance. Abraham, p. 140.

¹¹John G. McLean and Robert Haigh, The Growth of Integrated Oil Companies (Boston, 1954), p. 650.

¹²Fritz Machlup, The Economics of Sellers' Competition: Model Analysis of Sellers' Conduct (Baltimore, 1952), p. 21.

relatively small value produced simultaneously with a product of greater value."¹³ Obviously, the value of asphalt obtained from a barrel of crude depends on its price and volume relative to other refinery products, but the value of asphalt does run significantly lower than that of the "main products" such as gasoline.

According to Alan Manne, asphalt would have qualified as a joint product prior to the introduction of the "cracking process", but since 1913 refiners have had some control over the proportions of the product-mix.¹⁴ But even though the refiner is no longer confined to fixed proportions, he still faces significant limitations on his ability to control the product-mix. This point should be emphasized. The refiner is still not free to vary his product-mix at will, but the chief limitation appears to be economic rather than technological. For as De Chazeau and Kahn point out, while it is conceivable that a refiner could produce all gasoline, it would not be economically feasible. The cost of varying significantly beyond normal refinery output patterns is prohibitive.¹⁵ So while asphalt is not a true joint product, it is still a fact that much of the cost involved in asphalt production is a joint or common cost and such costs cannot be accurately allocated to the individual products. Some amplification of this point is warranted. Machlup asserts that under such cost conditions, marginal cost of the

¹³Adolph Matz, George Frank and Othel Curry, Cost Accounting: Management's Operational Tool for Planning, Control and Analysis (Dallas, 1962), p. 411.

¹⁴Alan S. Manne, "Oil Refining: Yield Coefficients and Actual Prices," Quarterly Journal of Economics, LXV (1961), p. 400.

¹⁵Alfred E. Kahn and Melvin G. De Chazeau, Integration and Competition in the Petroleum Industry (New Haven, 1959), p. 70.

individual product can be ascertained. In fact, he states that marginal cost is the only cost that can be unambiguously ascertained--that neither total cost nor average cost can be established without resorting to completely arbitrary rules of cost accounting. Machlup does admit, however, that even marginal cost cannot be determined from accounting records. He goes on to state that while it is theoretically possible to compute marginal cost, it is an entirely different matter as to whether marginal cost is indeed estimated by firms and of real significance in business practice.¹⁶

Thus the relevant question is whether petroleum refineries do in fact attempt to estimate such costs and use them in asphalt pricing. The answer to that question seems to be negative. W. L. Nelson, technical editor of the Oil and Gas Journal, a leading trade publication, has addressed himself to the issue of allocating costs to the individual products (and specifically asphalt) on several occasions. His labors have led him to conclude that "the problem of allocating refinery operating costs to the many petroleum products is so complicated that a completely satisfactory method will probably never be available."¹⁷ Cassady reaches a similar conclusion.¹⁸ Because of the impossibility or impracticability of accurately determining costs (marginal or otherwise) of the individual products, the practice is usually to adopt some arbitrary accounting method. One commonly used

¹⁶Machlup, pp. 24-25.

¹⁷W. L. Nelson, "How to Allocate Operating Costs to Each Product," Oil and Gas Journal, August 5, 1963, p. 108.

¹⁸Ralph Cassady, Price Making and Price Behavior in the Petroleum Industry (New Haven, 1954), p. 81.

procedure is to allocate no specific costs to the by-product at all. Any revenue resulting from its sale is then either credited to income or recorded as a cost reduction.¹⁹

Since refineries normally do not attempt to allocate costs to individual products such as asphalt, then cost cannot very well play an important role in the pricing and output decision. After concluding that there is no really satisfactory way of assigning costs to asphalt, Nelson further concluded that, "In fact, there is not much logic in determining production costs when factors other than costs are the ones that actually establish prices."²⁰ Once again, Cassady is in agreement with Nelson. He argues that because of the joint nature of costs, cost does not seem to be a dependable guide for pricing such products. Instead, he concludes that demand appears to be the only reasonable guide to pricing.²¹

Brief note should be made here concerning some other cost conditions in the petroleum refining industry. First, refining tends to be characterized by high fixed costs relative to variable costs. One study indicates that for conventional refineries ranging in size from 10,000 to 200,000 barrels per day and operating at capacity, fixed

¹⁹Matz, Frank and Curry. See page 412 for an explanation of the various methods of handling joint or common costs.

²⁰Nelson, "How to Allocate Operating Costs to Each Product."

²¹Cassady.

costs may constitute as much as 73 per cent of total costs.²² It should be kept in mind, however, that this figure relates to total refinery operations, and not to the production of a single product such as asphalt. Second, not all costs in petroleum refining and processing are joint or common costs. Some, such as storage costs and the costs of further processing are directly assignable to individual products. Such costs tend to be a small proportion of total refinery costs, however. Most costs are of the type which cannot be unambiguously allocated to individual products.

Thus, the following conclusions arise concerning the relationships between refining technology and the cost, output, and prices of asphalt:

- (1) Because of refining technology, the supply of asphalt is determined primarily by the size of the refinery throughput.
- (2) Total, average, or marginal cost of producing asphalt cannot be accurately determined.
- (3) The supply of asphalt appears to be largely a function of the demand for other petroleum products--particularly gasoline.
- (4) Production cost does not seem to be an important consideration in asphalt pricing since it cannot be accurately determined.

²²McLean and Haigh, p. 563. Testimony by refinery officials adds credibility to such a conclusion. Because the witness obviously did not define fixed costs as an economist does, it is impossible to determine the exact breakdown between fixed and variable costs at the Kerr-McGee refineries. The testimony of Mr. Frank Love does, however, clearly indicate a high ratio of fixed to variable costs. Trial Transcript, XXX, pp. 3245-3253.

Demand

Users of Asphalt

It is possible to separate the users of Oklahoma-produced asphalt into four general groups. These are: (1) private contractors and industrial users, (2) local governmental units, (3) the Oklahoma Highway Department, and (4) out-of-state users. As previously noted, the primary use of liquid asphalt is for highway construction and maintenance. The Oklahoma Highway Department purchases large amounts of asphalt directly from the suppliers in a manner described below for the purpose of maintenance and repair of the State road system. In addition, the State contracts with private contractors for the building of new roads and major resurfacing of old ones. Special note should be made of the fact that the State does not own the heavy equipment required for heavy construction. Therefore, the State's direct purchases of asphalt are for road repair purposes. Asphalt used in heavy construction takes the form of indirect purchases through these private contractors. County governments also purchase asphalt directly from the suppliers. Aside from the private road building contractors, the remaining part of group (1) above consists primarily of industrial users using asphalt for roofing, but also for floor tile, insulation, and for other purposes. The last group, out-of-state buyers, consists largely of state governments demanding asphalt for highway use. Among the states included would be Iowa, Minnesota, Nebraska, South Dakota, Texas and Wisconsin. The major out-of-state buyer is Missouri.²³

²³State of Oklahoma v. Allied Materials, et al., Plaintiff Exhibit Nos. 66, 80, 78, 68, 79, 72.

Some important distinctions between the different groups of users must be noted. Of the groups listed, the first, consisting of private contractors and industrial users, is comprised of profit-seeking entities. Groups (2) and (3), consisting of governmental units are not similarly motivated. There are significant implications inherent in this difference. Being a State agency, the Oklahoma Highway Department must depend on the Legislature for its funds. Thus the amount of asphalt purchased by the Department each year depends primarily on the amount of road repair to be undertaken and its appropriation. As a consequence, one could expect that the quantity purchased by the Department would be less responsive to price changes than would be the case with nongovernmental users. Further, when it is considered that there is not a good substitute for liquid asphalt in road repair use, this points to a lower price elasticity of demand in this market than would be expected in the other markets.

Private users, on the other hand, could be expected to be more responsive to the price charged. Being profit-seeking firms, if the price of asphalt rises, they could be expected to cut back on their purchases and output. Further, since private contractors build new roads for the State where the Oklahoma Highway Department merely repairs existing roads, the private users have the option of substituting concrete for asphalt if the price of the latter is too high. Additionally, industrial users have more latitude in buying from out-of-state sellers since they are not restricted as the Oklahoma Highway Department is, to buying specification asphalt.²⁴ Consequently, it can

²⁴This does not apply, however, to private contractors working on a State project. They must use specification asphalt just as the State does.

be concluded that Oklahoma asphalt suppliers face a more elastic demand from private users than from the Oklahoma Highway Department.

Last, consider group (4), the out-of-state users. One would expect this market to have a greater elasticity of demand for the product than would any of the other markets. The reason for this is quite evident. Out-of-state buyers can find numerous suitable substitutes for Oklahoma-produced asphalt. Missouri, for example, can choose from sellers in Kansas, Oklahoma, or Missouri. Actually, Oklahoma suppliers account for less than 3 per cent of the total petroleum asphalt sold in the United States. For the years 1961 through 1965, Oklahoma suppliers averaged only 2.7 per cent of all asphalt sold for paving purposes in this country.²⁵ Thus out-of-state users have a good alternative to buying Oklahoma-produced asphalt, and could be expected to exercise that option any time the delivered price of Oklahoma asphalt rises above the price charged by any other source of the product.

Comparative Size of Markets

The Oklahoma Highway Department is a relatively small purchaser of asphalt. Testimony of sales personnel of the various suppliers indicates that they generally sold less than 10 per cent of their output directly to the State. For example, Kerr-McGee normally sold only some 2.5 per cent to 3 per cent of its asphalt to the State. Riffe averaged selling between 4 per cent and 5 per cent of its asphalt output directly to the State. For Phillips, the figure ranged up to 10 per cent. By far the largest user of Oklahoma-produced asphalt is the out-of-state market. Kerr-McGee generally sold from 75 per cent to

²⁵Petroleum Facts and Figures, pp. 229 and 233.

85 per cent of its asphalt out-of-state. Comparable figures apply for Phillips, Riffe, and the others. Aggregate sales figures reflect the relative sizes of the markets. While Oklahoma asphalt suppliers sold slightly less than 52 million gallons directly to the State during the period covered by the suit, they sold more than 108 million gallons to State highway contractors, and over 240 million gallons outside the State of Oklahoma.²⁶

Method and Terms of Sale

Since the antitrust activity which is the focal point of this study involves the sale of liquid asphalt to the Oklahoma Highway Department, the terms of the sales are important. During the time period covered in the suit, the purchase of asphalt for the Oklahoma Highway Department was done through the Central Purchasing Division of the State Board of Public Affairs. The sale was implemented by a contract designated 0072. This was a six-month, multi-award, open-end contract. Under this system, Central Purchasing would send invitations to qualified bidders to submit sealed bids on this contract. The opening of bids and letting of contracts was on a semi-annual basis. Being a multi-award contract, it could be awarded to all qualified bidders--not just one. Being open-end, the State was committed to purchase asphalt only in "quantities needed and designated." The quantity thus unspecified, the State might purchase no asphalt at all from a contract holder, or it might require the individual contractor to supply the entire amount needed by the

²⁶State of Oklahoma v. Allied Materials, et al., Trial Transcript, XXIV, pp. 2610-2611. XXVI, p. 2788, and Plaintiff Exhibit Nos. 86 and 99.

State. Thus the firm was put in a position of having to guarantee prices on an unspecified amount, with time of delivery also unspecified. Once the bids were opened, Central Purchasing sent to all bidders a list showing what all bidders had bid.

Another feature of the State's purchasing practice is the fact that all sales were f.o.b. refinery. While a full discussion of the importance and implications of this practice is deferred to Chapter III, suffice it to say here only that transportation costs are not insignificant. They amount to approximately one cent per gallon for every fifty miles transported.

Several other features of the State's buying procedure are noteworthy. First, it will be recalled that the Oklahoma Highway Department picked up the asphalt and transported it hot in its own trucks, and that it had return privileges on unused asphalt. This returned asphalt could not be returned directly to the seller's storage tank. Instead it had to go into a "slop" tank to be rerun through the refinery. Another important feature of the procedure was that the State would accept no bids from a refinery until it was completely satisfied that the refinery had adequate blending facilities, loading facilities and testing laboratories. Accordingly, until after the initiation of the suit, the State did not invite or accept out-of-state bids. And finally, there was a cancellation clause. A low bid would not necessarily guarantee a supplier a six month monopoly because the State could ask for new bids from all competitors within twenty-four hours of the opening. Either party could cancel the contract on thirty days' notice.

CHAPTER III

CONDUCT AND PERFORMANCE

The purpose of this chapter is to examine the economic behavior which could be expected to prevail among firms operating under such market conditions as were described in Chapter II. It should be noted at the outset that the author does not purport to present an original and unique theory which definitively explains the economic behavior of the industry. Instead, in the preceding chapter, certain market characteristics were noted which could be expected to influence pricing, output, and sales policies of firms operating within the industry. The approach of this chapter is to apply existing economic theory to predict as accurately as possible the way in which firms might respond to such circumstances.

In this chapter, pricing and sales policies of liquid asphalt suppliers are studied on two levels. It was noted earlier that several general groups of users of the product can be delineated. Consequently, each of the groups can be thought of as constituting a separate market for the product. One of these users, the Oklahoma Highway Department, initiated the lawsuit around which this paper is centered, and therefore receives special attention. Hence, the first task to be undertaken in the present chapter is to analyze that market. Specifically, what sales

and pricing policies would one expect to prevail within the Oklahoma Highway Department market? Second, it is necessary to examine price policies between the several different markets.

Pricing and Sales to the Oklahoma Highway Department

The sale of liquid asphalt to the Oklahoma Highway Department exhibits rather clearly the basic characteristics of an oligopolistic market structure. While the term "few" is not quantified in the economic literature, the number of liquid asphalt suppliers in this market is sufficiently small to qualify as "few" by the standard definition of the term.¹ Actually, "few" firms are present if a single firm acting alone can significantly affect the market and influence other firms. A direct consequence of fewness of sellers is that oligopolistic firms are mutually interdependent. They must be rival-conscious since the actions of one firm affect the other firms in the industry. This feeling of mutual interdependence and rival consciousness among the sellers is reflected clearly throughout the defendants' testimony in the trial.²

An oligopolistic industry may sell a homogeneous product, in which case it is classified "pure oligopoly", or it may sell a differentiated product in which case it is called "differentiated oligopoly." While it has previously been noted that, within grades, asphalt is asphalt,

¹For a formal definition of "few", see William Fellner, Competition Among the Few (New York, 1965), p. 41.

²See, for example, the opening remarks of Mr. Coleman Hayes, representing Kerr-McGee. State of Oklahoma v. Allied Materials Corporation, et al., Trial Transcript, I, p. 66.

it must be recognized that there are numerous bases for product differentiation. Location of the seller is one such basis. Thus, even though chemically, asphalt may be asphalt, the output of one firm may not be a good substitute for another firm's asphalt because of transportation costs, inconveniences and time involved in delivery, and other reasons. Perhaps then it is most appropriate to categorize the Oklahoma market as one which approaches pure oligopoly.

Since the spectrum of market structures referred to as oligopoly is so broad, it is difficult or impossible to be definitive or precise in oligopoly theory. Prices in an oligopolistic market may exhibit tremendous stability over time, or, at the other extreme, the market may be characterized by persistent price wars. Since price fixing charges tend to arise from the former and not from the latter condition, emphasis is placed on factors leading to, or contributing to, price stability in oligopolistic markets.

Prices may remain stable over time as a result of collusion between sellers, or stability may exist in the face of independent action by the sellers. In either case, the concept of oligopolistic interdependence, mentioned above, is one of significance, and one which seems to be important in explaining the actions of Oklahoma asphalt suppliers. Because the actions of one firm may be expected to affect other firms in the industry, each individual firm has less than complete freedom of action. The result, as is pointed out by Professor James Hibdon, is that for any firm contemplating an action, the consequences of the action are less certain of being favorable.³ This uncertainty--

³James E. Hibdon, Price and Welfare Theory (New York, 1969), p. 285.

oligopolistic uncertainty it is often called--takes on a great deal of importance. The firms may try to eliminate it through collusive action, or each firm may react to it by becoming hesitant to initiate a change. In either case, the result tends toward stability. The question to be asked now is which of the two approaches is likely to be taken by firms operating under the market conditions earlier found to exist in this particular setting. To answer that question, several related sub-questions must be examined. What are the incentives for firms to engage in collusion? Under what market conditions are collusive agreements most likely to abound? What are the incentives for firms to engage in independent action? Could collusion continue to exist over time in such a market as described above?

Collusive Action

Conditions Conducive to Collusive Agreements

It is generally accepted that oligopolistic market structures often invite collusion.⁴ In addition to reducing oligopolistic uncertainty, collusion may allow the firms to restrict output, raise prices, and thereby reap monopoly profits for the conspirators. Further, the existence of a collusive agreement may aid the firms in blocking potential new market entrants. The existence of economic incentives

⁴The term "collusion" has become a somewhat ambiguous one. Its legal and economic meanings appear at times to be at odds. In order to minimize confusion, this paper will presently reserve the term for those contracts or conspiracies forbidden by our antitrust laws. The term "collusion" will not be applied to informal understandings (such as some types of price leadership) which are not in violation of the antitrust statutes. This whole question is, of course, one of crucial importance in antitrust. Accordingly, it will receive expanded consideration in Chapter V.

for firms to engage in collusive action does not, however, guarantee that the opportunity is always available. Certain market conditions seem to be conducive to collusion while certain other market conditions tend to preclude collusion as an alternative available to competition-weary competitors. What about Oklahoma asphalt producers? Does the market in which they operate seem to be one in which collusive action would be possible? While numerous writers have considered in varying degrees market structures conducive to collusion, two recent articles deal specifically with this issue. The articles, "Economics of Price Fixing" by Walter B. Erickson, and "Nature and Significance of Price Fixing Rings" by John M. Kuhlman both attempt to enumerate factors which are conducive to conspiracy.⁵ From these factors they attempt to make some inferences concerning conspiracy-prone industries. Comparing the conditions in the Oklahoma asphalt industry with Erickson and Kuhlman's factors should provide some insight into the practicability and/or probability of such a conspiracy in the sale of liquid asphalt to the Oklahoma Highway Department.

The major factors thought by Kuhlman to determine the profitability of a price fixing ring include:

1) Number of firms. Kuhlman notes that the cost of enforcing the price fixing agreement rises as the number of firms increases. Erickson also considers this a prime factor. He cites industry structure, and especially the number of firms and their size

⁵Walter B. Erickson, "Economics of Price Fixing," Antitrust Law and Economics Review, II (Spring, 1969), pp. 83-122. John M. Kuhlman, "Nature and Significance of Price Fixing Rings," Antitrust Law and Economics Review, II (Spring, 1969), pp. 69-82.

distribution, as the single most important factor in the development of collusive pricing. He argues that two types of industrial structure seem to be prone to conspiracy: "one, an industry having a very small number of firms; the other, an industry having a somewhat larger number of firms but with one or two of them predominant in size."⁶

When one looks at the Oklahoma asphalt producers relative to this first factor, it must be admitted that the industry would fall into Erickson's conspiracy-prone category. There are eight firms which sell asphalt to the Oklahoma Highway Department. Two of the firms, Bell of Ardmore, and Kerr-McGee in Cushing and Wynnewood, each have asphalt producing capacities more than double that of any other supplier.

2) Simplicity of the product. Kuhlman argues that a very simple product which is priced as a "solo" rather than a more complicated one which is often sold in combination with some other product is most conducive to price fixing. He attributes this to the relative ease of policing the agreement when the product is simple. Asphalt is, of course, a product which is priced and sold "solo".

3) Technological stagnation. The cost of enforcing the agreement is generally less if the product is fairly standard and unchanging. Because of the fact that asphalt must meet State specifications, there is no room for product innovation in the market so far as the Oklahoma Highway Department is concerned. Thus it could be concluded that Kuhlman's third condition is met in the present case.

4) Sealed bids. Kuhlman suggests that the sealed-bid purchasing practices of public purchasing agents is particularly helpful to

⁶Erickson, p. 85.

conspirators. For this reason he argues that price-fixing is more prevalent in sales to government agencies than in sales to private firms. The following statement summarizes his position:

The purpose of the sealed-bid, public-opening system of purchasing is of course to encourage the seller to engage in price discrimination, that is, to offer a lower price to the government than he normally charges to the general public. But the actual result may in fact be just the opposite. The public-opening of the bids makes the policing of the rings' activities relatively efficient and cheap. All who bid are advised at the time of the opening of (a) the identity of the successful bidder and (b) the winning price.⁷

The bidding procedure followed by Oklahoma's Central Purchasing has already been discussed, and is of the variety described by Kuhlman. The result is that any firm cheating on the alleged agreement would be immediately detected.

5) Barriers to entry. Obviously, since the successful ring provides an incentive for new firms to enter the market, it is necessary to block their entrance to protect the ring. Since asphalt is merely a minor by-product of a petroleum refinery and the capital requirement for building an efficient refinery is quite large, it seems doubtful that even a continued existence of monopoly profits in the sale of asphalt would induce new firms to build asphalt producing facilities.

6) Inelastic demand. Both Kuhlman and Erickson agree that price fixing is more likely to occur in markets in which the demand is relatively inelastic. For as Kuhlman notes, "a government agency is probably more sensitive to its overall budget restraint than to changes

⁷Kuhlman, p. 77.

in the prices of the particular products it buys."⁸ It has previously been noted that the Oklahoma Highway Department's demand for liquid asphalt may be expected to be relatively inelastic.

7) Product differentiation. Kuhlman notes that where there is product differentiation, the difficulty of organizing and operating a price fixing ring increases. It was established in the preceding chapter that one load of asphalt which meets State specifications is identical to any other such load.

Having analyzed the above factors, Kuhlman offers a profile of the conspiracy-prone industry.

On an a priori basis, then, one would expect price fixing arrangements to be confined to certain industries and to be relatively unlikely in others. In general, the price-fixers' products will be relatively simple, will have an inelastic demand, and will generally be sold on a "solo" basis. The industry will be relatively stable as far as technology is concerned. Product innovation and sales promotion will be largely absent. The product is more likely than not to be sold on a sealed-bid basis and it must be possible to limit or prevent new entrants from entering the industry.⁹

It appears that Kuhlman's profile fits the conditions surrounding the sale of liquid asphalt to the Oklahoma Highway Department rather well. Before attempting to make an assessment of the true significance of this finding, however, it should prove helpful to examine Erickson's analysis of conditions conducive to collusion. He argues that six critical factors are largely responsible for the development of most conspiratorial arrangements. Once again, these factors are listed, explained, and compared to the Oklahoma case.

⁸Ibid., p. 73.

⁹Ibid., p. 74.

1) Structure of industry. This first factor roughly corresponds to Kuhlman's first factor, and Erickson's findings are discussed above.

2) Lack of alternative means of "coordinating" prices. Erickson contends that there is often a relative absence of alternative, non-collusive modes of effecting conspiratorial objectives. Such alternatives would include price leadership, cutthroat competition, mergers, and the like. This factor is one of extreme importance in the development of this case, and must be examined in depth. Thus a full discussion is deferred until the section dealing with independent action. There it is asked whether or not there is a satisfactory alternative to collusion available to Oklahoma asphalt suppliers by which prices may be stabilized.

3) Depressed conditions in the industry. Erickson argues that conspiracy often follows a period of depressed conditions in the industry. His studies have led him to conclude that often (in fact, in every case he studied) the beginnings of collusion or its revitalization occurred immediately after the industry had suffered certain economic reversals. The importance of this factor in influencing the likelihood of a conspiracy in the present case is difficult to ascertain. Because of the fact that asphalt is a minor refinery by-product, it can hardly be thought of as constituting an industry in the sense intended by Erickson. Thus is collusion likely to be borne of a period of depression in just the sale of asphalt, or perhaps the sale of gasoline, or the sale of all refinery products? Further, would the conspiracy arise because of depressed conditions in just one market or because of depressed conditions in all markets for the product? Erickson does not provide an answer to these questions, but it might

be enlightening if one could get some idea of the economic conditions in the industry just prior to the time that the alleged conspiracy began.

The State of Oklahoma alleges that the origins of the conspiracy date back to the formation of the Asphalt Refiners Association in January, 1954. Assessing the economic condition of the relevant industry or market (whatever it may be) at that time is no easy task. There are no available data concerning the profitability of asphalt operations alone, and the profitability of total refinery operations would not seem to be a relevant variable. About the best indicator is the behavior of sales of asphalt in the years just preceding 1954. Unfortunately, the Bureau of Mines did not report asphalt sales by individual states or regions prior to 1953. Asphalt sales data are available on a national basis, however. They show that United States sales of petroleum asphalts for paving use rose steadily throughout the early 1950's, going from about 3.3 million tons in 1950 to almost 10 million tons by 1954. U.S. asphalt sales for all uses showed similar increases, rising from 10.5 million tons in 1950 to about 14.7 million tons in 1954.¹⁰ Neither of these trends indicates economically depressed conditions.

Actually, it must be concluded that Erickson's third factor is not readily applicable to the present case. If one tries to adapt it to the case, however, what limited measures are available do not suggest that the Asphalt Refiners Association was formed in response to depressed conditions.

¹⁰Petroleum Facts and Figures (New York, 1959 ed.), p. 348.

4) Inelastic demand--"overcapacity". The importance of elasticity of demand and its relevance to the Oklahoma case are discussed above. Regarding capacity, Erickson argues that conspiracy is more likely to be attempted when there is potential overcapacity. His theoretical explanation is that the existence of overcapacity makes price leadership or other forms of informal price coordination difficult to maintain. Firms have a great incentive to cut price in hopes that competitors will not follow suit.

Assessing the capacity factor relative to Oklahoma asphalt suppliers is quite difficult. The primary problem is that capacity and overcapacity are not very meaningful concepts unless their definitions take costs into consideration. And as previously indicated, average cost figures are indeterminant in the production of asphalt. Thus what constitutes overcapacity? Erickson defines it as productive capacity that exceeds current output. Accepting that definition, it seems unlikely that asphalt producers could be considered as suffering from overcapacity. After all, the primary purpose of petroleum refining is not the production of asphalt.

5) Strong trade associations. Erickson contends that, in general, the larger the portion of the industry encompassed by a trade association, the more conspiracy is to be expected. The trade association does, of course, provide the mechanism through which conspiracy can be easily conducted. It has already been noted that all Oklahoma asphalt suppliers were members of the Asphalt Refiners Association. Those suppliers who were not charter members of the Association joined as soon as they incorporated or began to produce specification asphalt.

6) Strength of industry leadership. Erickson's sixth factor is also one which can hardly be applied in a beneficial way here. He argues that strong personal leadership--either for or against conspiracy--may have some effect on the creation of collusive arrangements. While this may well be true, there is really no way to test empirically the importance of that factor in the present case.

Having considered Erickson's six critical factors, how do they relate to the Oklahoma case? Erickson himself clearly states the usefulness of this analysis in pointing out that these six factors cannot be regarded as definitive analysis of conspiracy. He feels that their real value lies in the fact that they provide policymakers with a "mechanism that permits reasonable predictions as to which industries are particularly susceptible to collusion."¹¹ Would Erickson consider Oklahoma asphalt producers particularly susceptible to collusion? Looking at his six factors relative to the case, the answer to that question is not completely obvious. His first factor and the one which he considers most important, the number and size distribution of firms appears to fit the Oklahoma situation rather well. Whether there are alternatives to collusion, his second factor, remains to be analyzed. His third factor, depressed conditions in the industry prior to the inception of the alleged conspiracy, does not seem to fit. The Oklahoma Highway Department's demand for asphalt does appear to be relatively inelastic, but the existence of industrial overcapacity is doubtful. Since the industry trade association is all inclusive, Erickson's fifth factor definitely fits. The sixth factor is indeterminant.

¹¹ Erickson, p. 89.

Several general conclusions can be reached on the basis of Kuhlman's and Erickson's analyses. On an a priori basis, it appears that Kuhlman describes Oklahoma asphalt producers as being conspiracy prone in the sale of liquid asphalt to the Oklahoma Highway Department. Erickson's analysis would less clearly include Oklahoma asphalt producers, but might at least make them suspect. It is extremely important, however, to state clearly what this all means. The basic question asked was this: Given the market structure and conditions described in Chapter II, what economic behavior could be logically expected? To answer that question, it is necessary to ask if collusion is a course of action which the firms could follow. This must be answered affirmatively. But that does not mean that the firms did engage in collusion, or even that collusion is the most likely course of action for them to follow. It simply means that conditions in the market make collusion a real and perhaps even attractive alternative.

Collusion over Time

Even though there exists both the incentive and opportunity for firms to enter into a collusive agreement, there is no guarantee that such an agreement will be viable. Once the agreement is instituted, its very existence may provide individual firms with a strong incentive to cheat on the agreement. Thus, the next question is this: Even if a price fixing, market sharing agreement were to exist between Oklahoma asphalt suppliers, could one reasonably expect it to remain in force over a long period of time?

Obviously, there are some factors that tend to add stability to a conspiracy, and some that tend to be destabilizing. What seem to be the principal factors? Anything which provides individual members of

the conspiracy with an incentive not to abide by the agreement reduces the probability that the conspiracy will be effective and long lived. If firms have such an incentive, then the key question is whether individual firms actually can cheat on the agreement and profit by so doing. It can generally be expected that the operation of a successful cartel does provide the individual member with an economic incentive to cheat.¹² This would surely be the case in Oklahoma if asphalt suppliers did have an agreement as the State alleged (and if the State were as responsive to price as it claimed to be). This is true because of the simple fact that none of the State's asphalt suppliers was able to sell its entire output to the Highway Department. All the suppliers had to sell large quantities of their product into other markets in which the prices were lower. Thus for any single firm, if it could individually reduce its price slightly below the cartel price, it would face a highly elastic demand. Even though the demand curve faced by the industry as a whole may be quite inelastic, the demand curve facing any one firm operating independently would likely be highly elastic. Consequently, it could expect to profit handsomely by such an action. But while Oklahoma asphalt suppliers would have had an incentive to cheat on the alleged agreement, could they reasonably expect to "get away" with such price chiseling? The answer is undoubtedly no. And

¹²While it would be inappropriate here to use the term "cartel" as associated with the highly centralized European type, the term, as defined by Stocking and Watkins, applies. They define a cartel as "an arrangement among, or on behalf of, producers engaged in the same line of business with the design or effect of limiting or eliminating competition among them." George Stocking and Myron Watkins, Cartels or Competition? (New York, 1948), p. 3. So defined, the State of Oklahoma was in effect accusing the defendants of operating a cartel.

the reason is that Oklahoma's Central Purchasing would have discouraged such price reductions. The practice of public disclosure of information on the winning bid price and bidder would make the policing of the agreement quite simple. No firm could expect to individually reduce its price and go undetected by the group. And once the secrecy is lost, so is the advantage of the price reduction. Thus it could be concluded that the State itself would mitigate against a natural tendency of the conspiracy to break down.

If no firm could reasonably expect to be able to cut its price in secrecy, is it possible that a firm still might find it advantageous to abrogate the agreement and act independently? Is it likely that a firm might decide to openly cut its price in order to increase sales and profits? In the present case, such a possibility seems unlikely. The reason can be traced directly to the peculiar nature of the product. Since asphalt is merely one by-product of petroleum refining, its price can drop extremely low without causing a significant reduction in output. Actually, so long as the price covers the cost of processing the raw asphalt, such as blending it to specification cutbacks, and storage costs, the firm could still profit by producing and selling the product. Under such a cost structure, no firm is likely to find it in its best interest to act independently and take on its rivals in an open price war. Indeed, any time that a firm's average variable costs are small in proportion to average total costs, that firm can be expected to show little affinity for open price wars.

Another instance in which the operation of a successful conspiracy generates incentives detrimental to its own continued existence is that of monopoly profits. To the extent that the agreement is successful in

reaping monopoly profits for the group, it tends to attract new entrants, thereby threatening the stability of the conspiracy. Asphalt producers seem fairly well insulated from this threat, however, because of the nature of the product. Few firms are likely to enter the petroleum refining industry because of the existence of monopoly profits in the sale of one of the minor by-products. There is still the possibility that already established refineries from other states might enter the market, however. And while Kansas refiners were considered co-conspirators in the case, refineries in states such as Texas could also be considered as potential market entrants. But, once again, the State itself would tend to add stability to the conspiracy, for its asphalt specifications lessen the likelihood of out-of-state sellers entering the market. Thus it seems reasonable to conclude that entry would be sufficiently difficult to protect the conspiracy from potential entrants who would seek a share of the monopoly profits. This means that another natural destabilizing factor would be neutralized.

From the foregoing analysis it cannot be definitively concluded that a conspiratorial arrangement would be stable over a long period of time in this market. It can be concluded, however, that there are significant factors which would tend to add stability to such an agreement. First, State purchasing procedures would make the policing of the conspiracy easier. This would lessen the likelihood of a member cheating on the agreement. Second, cost conditions in the production of asphalt would lessen the likelihood of one firm's thinking that it could profit by initiating a price war which would kill the agreement. And third, the nature of the product plus State policies would help block new entrants who might upset the arrangement. Thus, there would

be less in the way of incentives and opportunities for firms to upset a conspiracy in this case than is often found in such arrangements. In summary then, it may be said that there is no guarantee that such an alleged conspiracy could remain viable over time, but that there is little reason to doubt that the alleged conspiracy, if it existed, could remain in force over time.

Noncollusive Action

The preceding section seems to indicate that the performance of Oklahoma asphalt suppliers could have been the result of collusive action. However, this is only half the story. For as A. D. Neale indicates, to prove the existence of a conspiracy by circumstantial evidence, one approach--and the one given primary reliance in the present case by the State of Oklahoma--seeks to show that the performance of the firms could result only from collusion.¹³ Thus the crucial question is whether the performance of Oklahoma asphalt suppliers could have resulted only from collusive action. This section then will analyze the expected performance of the firms in the absence of illegal collusion.

In the absence of collusion, would the performance of Oklahoma asphalt producers differ significantly from what it would be, given the existence of a price fixing agreement? With regard to pricing policies of the suppliers there is little reason to believe it would. Relative price inflexibility may obtain in the absence of--as well as in the presence of--collusion. The possible existence of a collusive agreement

¹³Neale, p. 49.

is not the only thing which could explain apparent joint action of firms in an oligopolistic market. Informal seller coordination may exist in a market in which there is no illegal collusion.

The Kinked Oligopoly Demand Curve

The concepts of oligopolistic interdependence and oligopolistic uncertainty, mentioned above, provide firms with an incentive to coordinate policies in some way--possibly legally, possibly illegally. One theory of legal coordination which is based very clearly on these two concepts and the resulting restraints on freedom of action by the individual firm is that of the kinked oligopoly demand curve. Paul Sweezy first presented this theory in 1939.¹⁴ The theory attempts to explain oligopolistic price stability in terms of the way in which an individual oligopolist imagines his rivals will react to a price change by him. The theory is developed along these lines: The businessman assumes that his rivals will react differently according to whether he raises or lowers his price. He assumes that if he raises his price, his competitors will not follow suit, in which case he will lose business. If, on the other hand, he lowers his price, he assumes that his rivals will not allow him to cut into their shares of the market, so they will match his price reduction. Note that this is merely an imagined phenomenon. The result, however, is to produce a corner, or kink in the demand curve visualized by the seller. He visualizes the portion of the demand curve lying above the current market price as being highly elastic, and that below it as less elastic. This being

¹⁴Paul M. Sweezy, "Demand Under Conditions of Oligopoly," Journal of Political Economy, XLVII (1939), pp. 568-573.

the case he concludes that he would lose sales by raising his price, but would sell very little more by lowering his price. Thus there is price rigidity.

It must be noted that the foregoing is an incomplete treatment of the theory of the kinked oligopoly demand curve, but for the purpose at hand it is adequate. The effects of rival consciousness and oligopolistic uncertainty are apparent, and the theory illustrates how these factors may place restraints on the individual firm's freedom of action, thereby reducing price flexibility. That is probably all that this particular theory can contribute to the present case. Its usefulness is somewhat limited in that it is based on some rather restrictive assumptions concerning the thinking of businessmen.

Price Leadership

Price leadership models need not be so restrictive, and may therefore offer better insight into pricing and sales policies of oligopolists. Fritz Machlup distinguishes between two general leadership arrangements: organized price leadership, and unorganized price leadership. He defines the former as a simple type of cartel which "may be confined to a tacit agreement that all members follow the price changes announced by a leader," or it may be somewhat more extensive.¹⁵ This type arrangement is illegal and falls into the collusive category discussed above. Unorganized price leadership rests on no formal agreement and is the type which is of interest here.

Is it possible for this latter type of price leadership to arise and thrive in the absence of some type of formal agreement? Is there

¹⁵Machlup, p. 491.

any reason to think that such a means of legal coordination among rivals is a real possibility? The answer to both questions is undoubtedly yes. For as Almarin Phillips observes, oligopolists recognize themselves as members of a group, and, not surprisingly, their behavior is similar to that observed in other small groups.

A leader arises in the group, often by apparently spontaneous recognition and without the need for showdown fights. An unwritten code develops, partly from emulation of the leader and partly because the leader enforces certain rules of conduct Fighting within the group is closely regulated by the code.

And as Phillips further notes:

. . . with so few members, the parallelism of simple oligopoly may easily arise as 'unconscious sensitivity to certain stimuli', or as a 'learned response' based on past experience.¹⁶

However it may develop, as the industry matures the firms often learn to avoid conflict within the group. When and if this behavior assumes the form of Machlup's unorganized price leadership, it may fall into any of several types. George Stigler distinguishes between price leadership associated with a dominant firm and that of a barometric type. As explained by Stigler, in the first instance

. . . the dominant firm . . . sets the price, allows the minor firms to sell what they wish at this price (subject perhaps to nonprice competition), and supplies the remainder of the quantity demanded.

In the case of the barometric type, it refers to

¹⁶Almarin Phillips, Market Structure, Organization and Performance (Cambridge, 1962), p. 26.

. . . the existence of a firm that conventionally first announces price changes that are usually followed by the remainder of the industry, even though this firm may not occupy a dominant position.¹⁷

In addition to Stigler's two types, price leadership also may be associated with the low-cost firm in the group. In such a case, since the low-cost firm can sell at a lower price than can its rivals, they have no choice but to sell at the price established by the low-cost firm.

Would the possible existence of price leadership seem to offer the best explanation of the identity of bids received by the Oklahoma Highway Department and for their inflexibility over time? Actually, the pricing and sales policies of Oklahoma asphalt producers cannot be adequately explained except in the context of the spatial dimensions of the case, and that aspect is analyzed next. Thus, at present, price leadership will be considered merely as a possible cause for uniform and relatively inflexible price quotations which might be expected in the Oklahoma Highway Department market. More is said about the subject later.

Spatial Aspects of the Problem

In attempting to explain price and sales policies of Oklahoma asphalt suppliers, the influence of spatial factors cannot be ignored. To assist in illustrating the effects of locational factors on pricing decisions, a simplified spatial model is constructed here. This model

¹⁷George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," Journal of Political Economy, LV (1947), pp. 432-449.

is actually an adaptation of Hotelling's early spatial model.¹⁸ Begin by considering Figure 3.

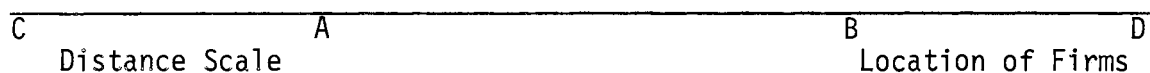


Figure 3. Location of Firms Along Linear Market Span

Line CD represents the linear span of the market along which the consumers are evenly spread. A and B represent two firms, each located at its respective letter. To determine the effects of geography on pricing and sales policies, the following simplifying assumptions are made:

- (1) Consumers are situated along the market in such a way that each unit of distance also represents a unit of sales.
- (2) Consumers have a perfectly inelastic demand for the product.
- (3) Consumers always buy from the seller offering the lowest delivered price.
- (4) Each seller has perfect knowledge as to the total quantity of the product that buyers will take off the market.
- (5) Each seller quotes f.o.b. refinery prices.
- (6) Transportation costs vary in a linear fashion with distance.
- (7) Cost of producing the product is zero.

Proceeding with the analysis now, leave the horizontal axis shown in Figure 3 unchanged, but add a vertical axis on which will be measured price. Figure 4 incorporates this addition. The vertical lines rising

¹⁸Harold Hotelling, "Stability in Competition," The Economic Journal, XXXIX (1929), pp. 41-57.

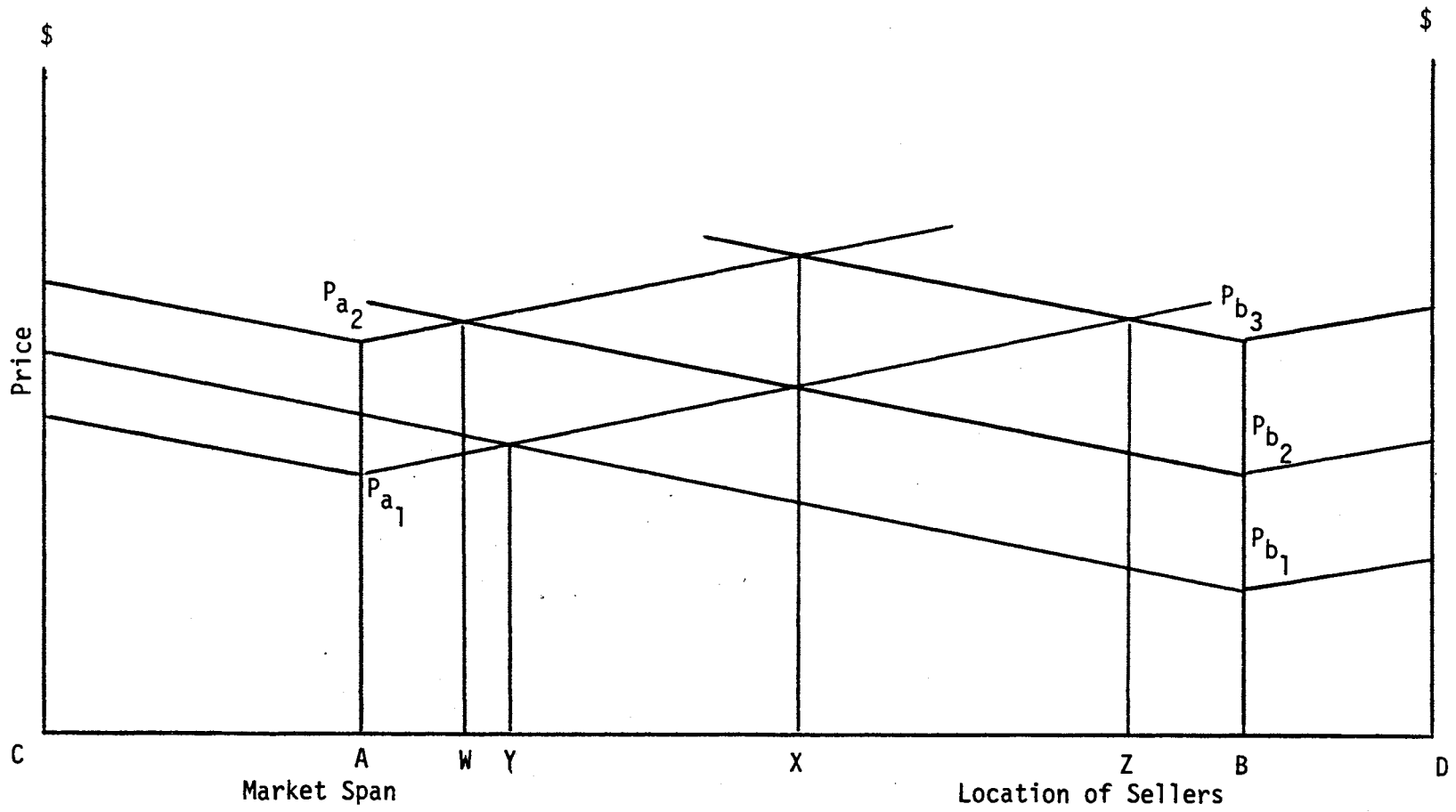


Figure 4. Market Boundaries Corresponding to Alternative F.O.B. Refinery Prices.

from A and B represent various f.o.b. refinery prices which might be charged by the respective firms. The upsloping lines emanating from these price lines represent delivered price lines. They are upsloping because of the assumption that transportation costs equal some constant c times distance d .

Since each customer will buy from the firm offering the lowest delivered price, then the boundary lines between A and B depend on their refinery prices. Table III shows the boundaries for the different prices shown in Figure 4.

TABLE III
TABULAR INTERPRETATION OF FIGURE 4

If Firm A Charges	While Firm B Charges	Firm A Has All Sales In Market Area
P_{a1}	P_{b1}	CY
P_{a1}	P_{b2}	CX
P_{a1}	P_{b3}	CZ
P_{a2}	P_{b1}	No Sales
P_{a2}	P_{b2}	CW
P_{a2}	P_{b3}	CX

It is readily apparent that if firms A and B charge identical f.o.b. refinery prices, such as $P_{a1} = P_{b2}$ (or $P_{a2} = P_{b3}$), then the boundary will lie equidistant between the two suppliers. This must be true because the slopes of all the various delivered price lines are equal. If either seller is able to lower his refinery price below that of his

competitor, however, he will be able to penetrate his competitor's territory and increase his sales. The crucial considerations are (1) whether he can unilaterally drop his price, and (2) if he would profit by so doing. To analyze that problem, consider Figure 5. This figure is similar to Figure 4, except that initially the firms are charging identical refinery prices, P_{a_1} and P_{b_1} . The boundary line is initially X . Given this situation, it is possible to measure the profit being made by each firm. Firm A's profit would be represented by the rectangle $XCFG$. Recall that zero production cost is being assumed. Therefore total revenue equals profit. Firm B's profit is the rectangle $XDHG$. Now what happens if either firm decides to drop its refinery price in order to penetrate its competitor's territory and increase sales? Assume that Firm B cuts its refinery price from P_{b_1} to P_{b_2} . Now its delivered price line becomes $P_{b_2}J$ while A's remains $P_{a_1}E$. The new territorial boundary becomes X' . What does this do to Firm A's profits? It obviously decreases them since A has lost sales equal to XX' . Ignoring momentarily A's reaction to his diminished profit, will B profit by the unilateral price reduction? The answer to that question depends ultimately on how significant transportation costs are. As a general rule, the higher transportation costs are, the smaller will be the increase in sales resulting from a given refinery price cut. The converse also holds true. Figures 6 and 7 illustrate this point. In Figure 6, transportation costs are very significant, thus the delivered price lines have steep slopes. In this case if B drops his price to P_{b_2} while A leaves his at P_{a_1} , neither party benefits. A suffers because he is now selling less at the same price. B suffers because while he gains some sales from A, he must sell to his old customers as

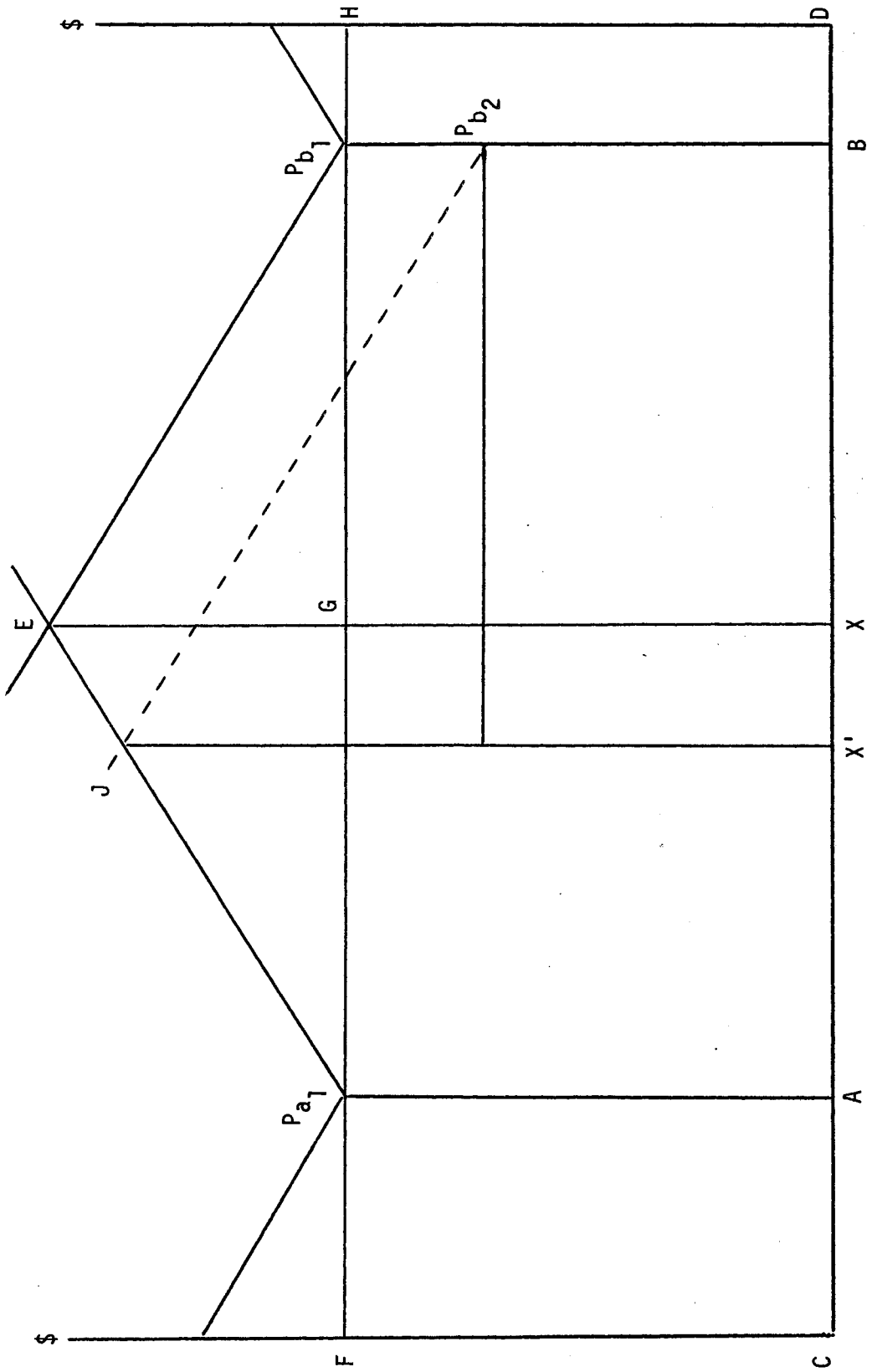


Figure 5. Profit Resulting From Alternative Pricing Policies.

well as his new ones at the lower price. (This is assuming that B is unable to engage in price discrimination.) It is readily apparent from Figure 6 that the area X'JKD is smaller than area XGHD. Thus Firm B would have no incentive to cut its price even if it knew that Firm A would not retaliate.

Figure 7 illustrates a situation in which transportation cost is much less significant, thereby producing a flatter delivered price line. In this case if B drops his price by the same amount as in the previous example, from P_{b_1} to P_{b_2} , while A holds his constant, a different picture emerges. Firm B will quite successfully penetrate A's territory, increasing its sales greatly. Obviously Firm A suffers. What about Firm B? In this case it benefits, increasing its profit from area XGHD to X'JKD. What if, however, A is not willing to stand by and see B infringe on his territory, steal his customers, and decrease his profits? If A meets B's price reduction, then the original boundary, X, prevails, both are selling the same amount as before the price cuts, and both are making less profit.

Summarizing, given the assumptions on page 50, if price changes made by one firm are always matched by the rival firm, both will always lose in case of a price reduction and gain in case of a price increase. Thus, if either firm believes that its rivals will follow its lead, there will be no incentive for it to reduce its price. But there will always be an incentive for it to raise its price. Actually, with the assumption of a perfectly inelastic demand for the product, both firms would continually prosper by raising their prices. If either firm believes that its price reduction will not be met, however, there may or may not be an incentive for the firm to lower its price. As is

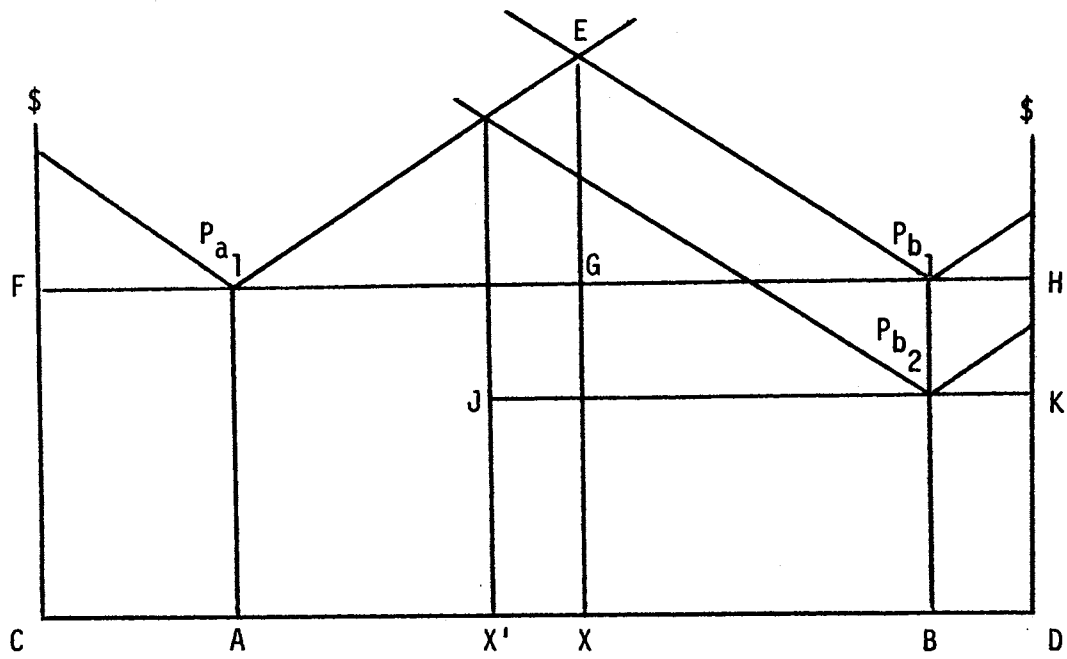


Figure 6. Profitability of Unilateral Price Reduction: Significant Transportation.

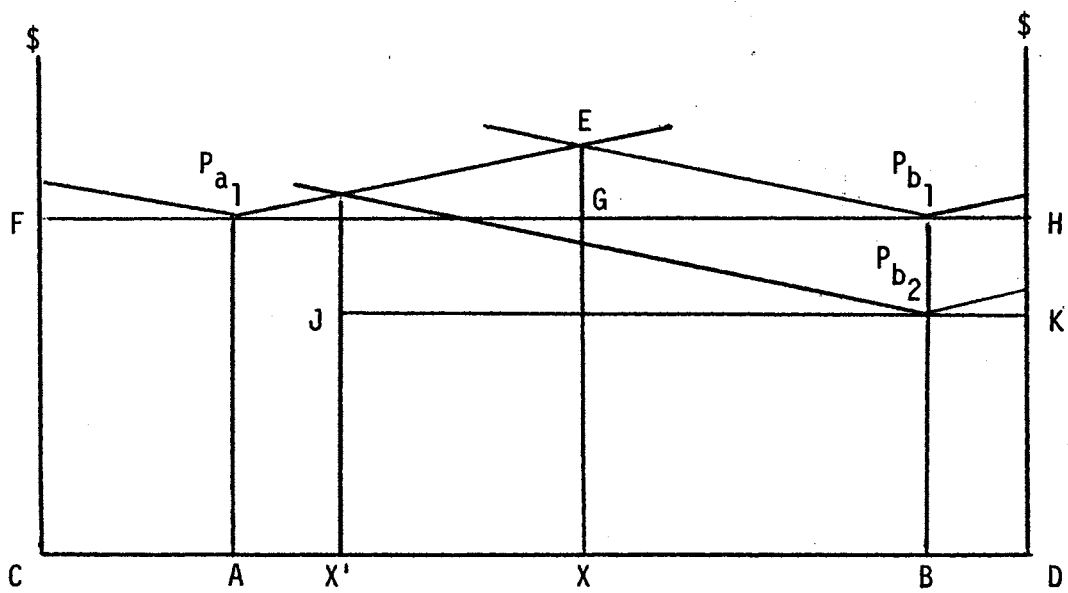


Figure 7. Profitability of Unilateral Price Reduction: Lower Transportation Costs.

illustrated by Figures 6 and 7, that depends on transportation costs. One extremely important qualification must be noted here. This entire analysis of the spatial aspects of pricing has been written under the assumption that each seller is knowledgeable of the quantity of the product that will be sold. Thus the only unknown variable with which the seller must contend is the reaction of his rival. If that assumption is dropped, allowances must be made for the newly introduced uncertainty. If rival reaction and consumer response to the lower price are both unknown, the effect may well be to lessen still further the incentive of a firm to cut its price. If a firm cannot engage in price discrimination, then will it have any incentive to lower its price in hopes of increasing sales? First, since the firm must lower its price on all units sold, it loses revenue on sales to existing customers. Unless this can be offset by revenue from sales to new customers, the price cut will not be profitable. Thus the seller is placed in a position of cutting his price in hopes that rivals will not retaliate and that buyers in the adjacent territory will purchase enough from him at the lower price to offset the lost revenue in his "home" market. If neither of these factors is a certainty, the price cut may then be considered too great a risk to take.

One other case should be mentioned in this section. The results obtained above may be altered significantly if a firm is able to engage in price discrimination between users in different geographic areas. Figure 8 illustrates this. Once again the firms are initially charging P_{a_1} and P_{b_1} . Firm A would like to increase its sales, but does not wish to "spoil" all his sales to the left of X by having to lower his price to these customers. Thus, if he can cut his price only to

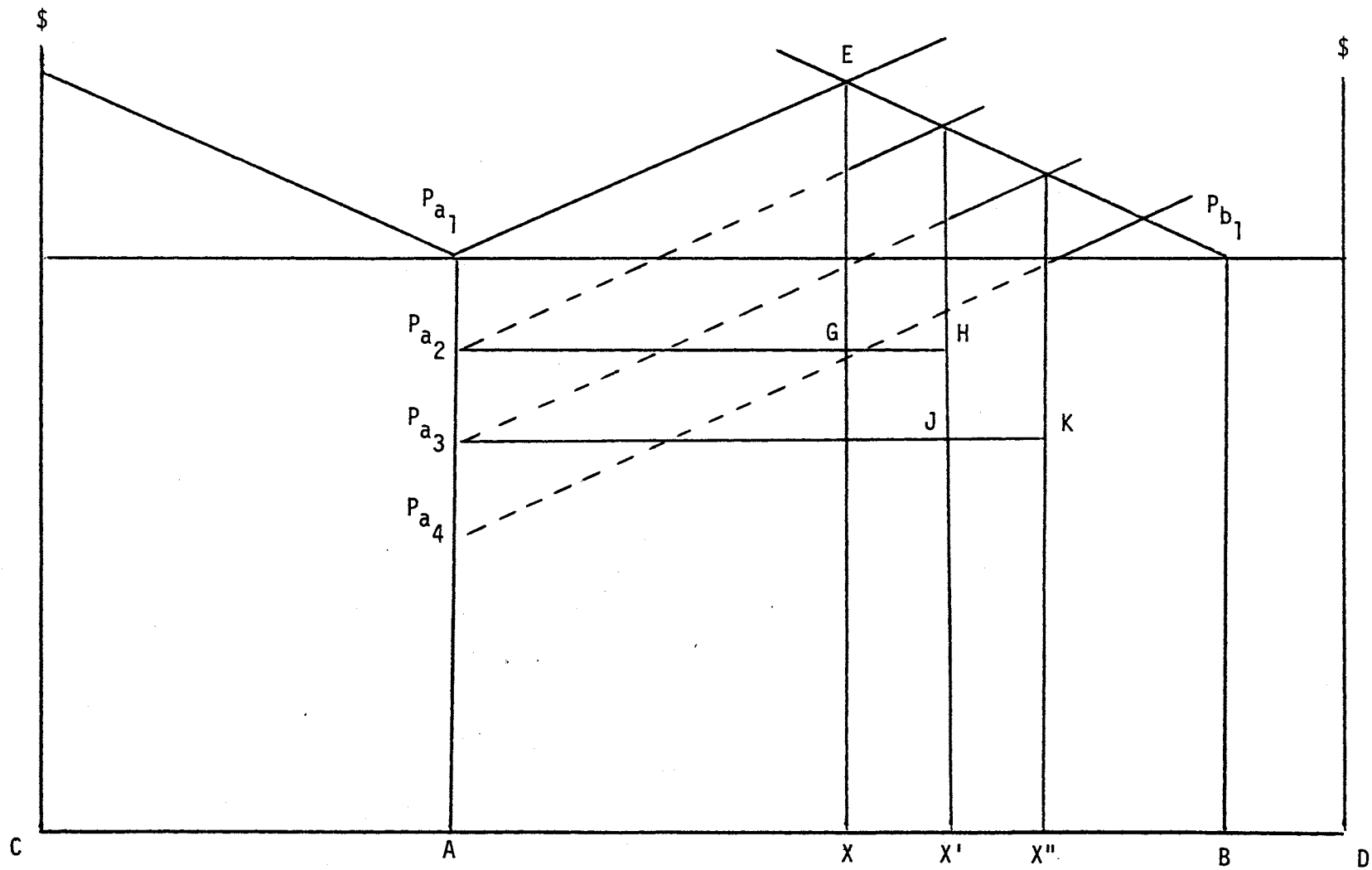


Figure 8. Profitability of Unilateral Price Reductions Under Conditions of Price Discrimination.

boundary line customers, then the marginal revenue from the added sales is equal to the refinery price at which each buys. The effects of this price discrimination are shown by the lines corresponding to P_{a_2} , P_{a_3} , and P_{a_4} . In each case, the lower refinery price attracts new customers, but the old customers must still pay the higher price. Thus when the price is dropped from P_{a_1} to P_{a_2} , the boundary line is extended from X to X' . The marginal revenue (and profit) resulting from the added sales is shown by the rectangle $XGHX'$. If the price is dropped to P_{a_3} in order to add still more customers, the marginal revenue is $X'JKX''$. The firm finds price discrimination an attractive policy because it allows the firm to sell to new customers without the necessity of cutting its price on all units sold. So long as the rival firm does not retaliate, there is always an incentive for the firm to cut its price to marginal customers. Thus price cutting seems most likely in instances in which a firm is free to engage in price discrimination and to act with a degree of secrecy.

This same analysis can be expanded to include any number of firms as is indicated by Figure 9. In the case illustrated there are six firms, lettered A through F, and each located at its respective letter. The circles represent equal delivered price curves. All have the same f.o.b. price and transportation rates are identical from each location. The straight lines between the circles show the natural market boundaries. The analysis of pricing and sales policies in this case differs only in that as a firm lowers its f.o.b. price, it enlarges its market circle. And in this case it may be infringing on the territory of more than one seller.

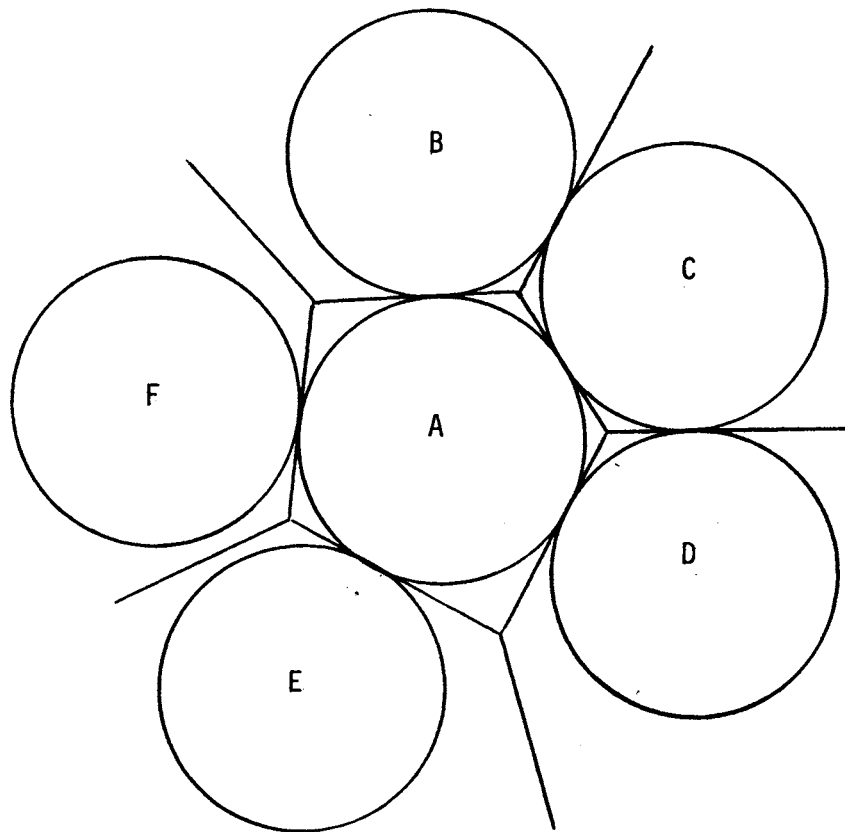


Figure 9. Market Boundaries for Firms Situated in a Nonlinear Market Span.

Applying the foregoing analysis to the sale of liquid asphalt to the Oklahoma Highway Department provides some useful insights into the pricing and sales policies of the suppliers. As a starting point, a brief review of some of the relevant facts concerning the sale of the product should prove instructive. First, it will be recalled that Oklahoma's Central Purchasing Agency issues multi-award contracts. The quantity to be taken, if any, and the time of delivery are unspecified. All bids, or actually price guarantees, are stated f.o.b. refinery. Further, it should be recalled that transportation costs cannot be considered insignificant, amounting to approximately a penny a gallon per 50 miles hauled. Indeed, relative to the f.o.b. refinery price of 10.25 cents per gallon paid by the State on MC asphalt, the transport cost is rather significant. The State buys so as to obtain the lowest delivered price. In addition, there is no chance that a firm might make secret price concessions to the State. Information on the winning price and bidder is made available to all bidders immediately after each opening.

Now, how do the actual facts in the case at hand compare with the assumptions in the preceding section? First, the Oklahoma Highway Department does not have a perfectly inelastic demand for liquid asphalt, but the quantity purchased does not appear to be highly responsive to price changes. This fact does not necessitate major changes in the analysis. It does mean, however, that even if all sellers act together, they cannot indefinitely increase their profits by continually raising prices. Thus there is some upper constraint on the price of the product. The relatively inelastic demand also means that if sellers become engaged in a price war, the Highway Department will not

substantially increase its purchases of asphalt. So the general rule that if all sellers act together they stand to benefit from a price increase and lose from a price reduction is still accurate. Second, the Oklahoma Highway Department does take transportation costs into consideration so as to obtain the asphalt at the lowest possible delivered price. Next, the assumption concerning the seller's knowledge of the quantity of the product to be bought is inaccurate. It has already been noted that the Oklahoma Highway Department does not specify quantities, and the effects of removing the assumption have been examined. No allowances need be made for the fifth and sixth assumptions. Sellers do quote prices f.o.b. refinery and transportation costs within the State are roughly proportional to distance. The accuracy or inaccuracy of the seventh assumption which deals with production costs does not alter the analysis. It was included merely to facilitate the illustration of profit incentives of sellers.

Now if one looks at the factors an asphalt supplier must consider in pricing to the Oklahoma Highway Department, the cumulative effects of the many peculiarities of that market come into focus. Begin with a situation in which all sellers are initially charging identical f.o.b. refinery prices. Assume that Firm A finds that its asphalt inventory is pressing on its storage capacity. How will the seller react? Will he cut his price to the Oklahoma Highway Department in hopes of working off his excess inventory? First, he knows that he cannot engage in price discrimination within this market. He makes a single price quotation on a semiannual basis and all sales to the Oklahoma Highway Department are at that quoted price. Thus if he cuts his price, he will have to sell at that lower price even in his naturally protected

territory. Since there is no chance of price discrimination within the market, there is no certainty that the price reduction will be profitable. He must then consider other factors. Will rivals retaliate? Will they match, or even exceed, the price cut? There is no chance that the price reduction can be kept secret for reasons previously discussed. Thus would Firm A have any reason to believe that his competitors would sit idly by and let him "violate" their territories and reduce their profits? It is inconceivable that Firm A would be so naive as to think that it could unilaterally reduce its price. Given this likelihood of precipitating a price war, Firm A would probably look for another alternative for reducing its inventory.

If the strong probability that his price reduction would be met or exceeded by his competitors is not enough to dissuade A from cutting his price, what else must he consider? Assume that Firm A sees rival retaliation as a risk which might or might not be worth taking, depending on other factors. Then A would need to speculate as to what would happen if rivals did not retaliate. As Figure 4 illustrates, there is no assurance that even a unilateral price reduction will be profitable when transportation costs are significant (given the impossibility of price discrimination). Even though a one cent per gallon price reduction would expand his market by fifty miles in all directions, there is no assurance of additional sales. And even if additional sales could be anticipated the time of delivery would not be known. The excess inventory which caused A's desire to cut his price might no longer exist by the time of delivery. Thus the price reduction might not solve his immediate problem even if successfully made. It is even possible that by the time he is called upon to deliver the

asphalt, he might have a shortage. He then would have to go into the open market himself and purchase the asphalt needed to fulfill the contract.

Reviewing his decision, the seller contemplating a price reduction would find very little positive encouragement. He would face almost certain rival retaliation, in which case his decision would be a poor one. On the other hand, even if rivals did not retaliate, he would face uncertain gains at best, no gains or a loss at worst. Weighing these factors, one would expect the seller to decide against the price reduction.

Now the only questions which have not been answered are those of what determines the actual price and how does one explain its movement over time. The best answer that can be given is that overall conditions of supply and demand dictate what the actual price will be. Identical price quotations from the suppliers could be expected for numerous reasons. In addition to the spatial forces analyzed above which tend toward identical prices, two or three others might be mentioned. One, since the overall conditions of supply and demand establish price, there is little reason to expect dissimilar prices on that basis. For as established earlier, cost of production differences are immeasurable and therefore not a ground for price differences. Since the Oklahoma Highway Department constitutes such a small part of the total demand for the product, demand should not cause price differentials between sellers. Also, Oklahoma asphalt suppliers must be considered to constitute a mature oligopoly. Since there are no basic forces causing price differentials, they--as do many mature oligopolists selling homogeneous products--arrive over time at a price with which they can

live. Asphalt price quotations for the various geographic regions are published regularly in trade publications such as Platt's Oilgram, so there is no real reason to expect that more than one price would prevail in a region.

Price may be expected to change periodically over time as a result of natural economic forces. Total refinery costs rise with inflationary trends in the economy. Demand changes over time. The fact that all refineries raise asphalt prices at roughly the same time and by the same amount may be due to some form of price leadership and to the fact that pricing data are widely available in trade publications. The exact type of price leadership is not especially important. On an a priori basis, one might suspect barometric price leadership to be the most likely type. Cassady's studies of the petroleum industry have led him to conclude that "the type of leadership pricing found in the petroleum industry appears to be predominantly of the barometric-firm type."¹⁹

Intermarket Sales Policies

In regard to pricing to the various markets for liquid asphalt that were listed in Chapter II, the Oklahoma supplier faces a strong incentive to engage in price discrimination. While it was previously noted that asphalt suppliers could not discriminate in sales within the Oklahoma Highway Department market, discriminatory pricing between markets, or third degree price discrimination as it is called, is almost the only logical course of action.

¹⁹Cassady, p. 87.

Two conditions must be met before any firm may successfully engage in price discrimination. First, the seller must have at least two markets or submarkets which he can keep separate. Unless he can prevent the firm receiving the lower price from reselling to the firm having to pay the higher price, his price discrimination scheme will collapse. Second, unless the different buyers have different elasticities of demand, the attempt at price discrimination will be pointless. The reason for this is made clear below in the analysis of discriminatory pricing strategy. Both the prerequisites for successful price discrimination are met in the present case. Elasticities of demand were discussed in Chapter II. Using just three of the different markets here for illustrative purposes, it will be recalled that the Oklahoma Highway Department's demand is less elastic than that of the other users. Oklahoma's private contractors and industrial users of asphalt have a more elastic demand for reasons already established. And out-of-state users of Oklahoma-produced asphalt have a still greater elasticity of demand since they have numerous substitutes available. It will be easier to explain how the markets are kept apart after the discriminatory pricing results are shown.

Normally a firm engaging in price discrimination must decide on the amount of its total output, the distribution of sales among the several markets, and the price to be charged in each market. For reasons established in Chapter II, total output is treated as a given at some level in the following analysis. Costs are also ignored. Once again, this is appropriate for reasons already discussed. Thus the firm must be concerned only with the pricing and sales distribution which will maximize total receipts. This means that the firm must

always sell in the market in which an additional unit of sales would add the most to total receipts. It accomplishes that by distributing its sales so that marginal revenue in each market is equal to marginal revenue in every other market. Figure 10 illustrates the proper sales distribution and pricing policy for the firm.

Markets I, II, and III represent the Oklahoma Highway Department, private contractors and industrial users, and out-of-state users, respectively. The seller would allocate his sales in the following manner: All quantities of less than OX_1 units would be sold in Market I since marginal revenue is greater there than in either of the other two markets. For quantities greater than OX_1 , the seller would distribute sales between Markets I and II, adding units to each market so as to keep marginal revenue equal in each market. No sales would be made in Market III until the total quantity exceeds OX_3 plus OX_2 . After that point sales would be distributed among the three markets, still keeping marginal revenue equal in all markets. Assume that the total output of the discriminating firm is equal to OX_4 plus OX_5 plus OX_6 . To maximize total receipts, OX_4 units would be sold in Market I at a price of OP_1 . OX_5 units would be sold in Market II at a price of OP_2 , and OX_6 units would be sold in Market III at a price of OP_3 . Shifting any units of sales from one market to another would result in less total revenue.

It should be apparent now why different elasticities of demand are necessary before price discrimination is plausible. The relationship between marginal revenue, price, and elasticity of demand is such that $MR = P - P/E$, where P denotes price, MR denotes marginal revenue, and E the elasticity coefficient. Since the firm maximizes total receipts

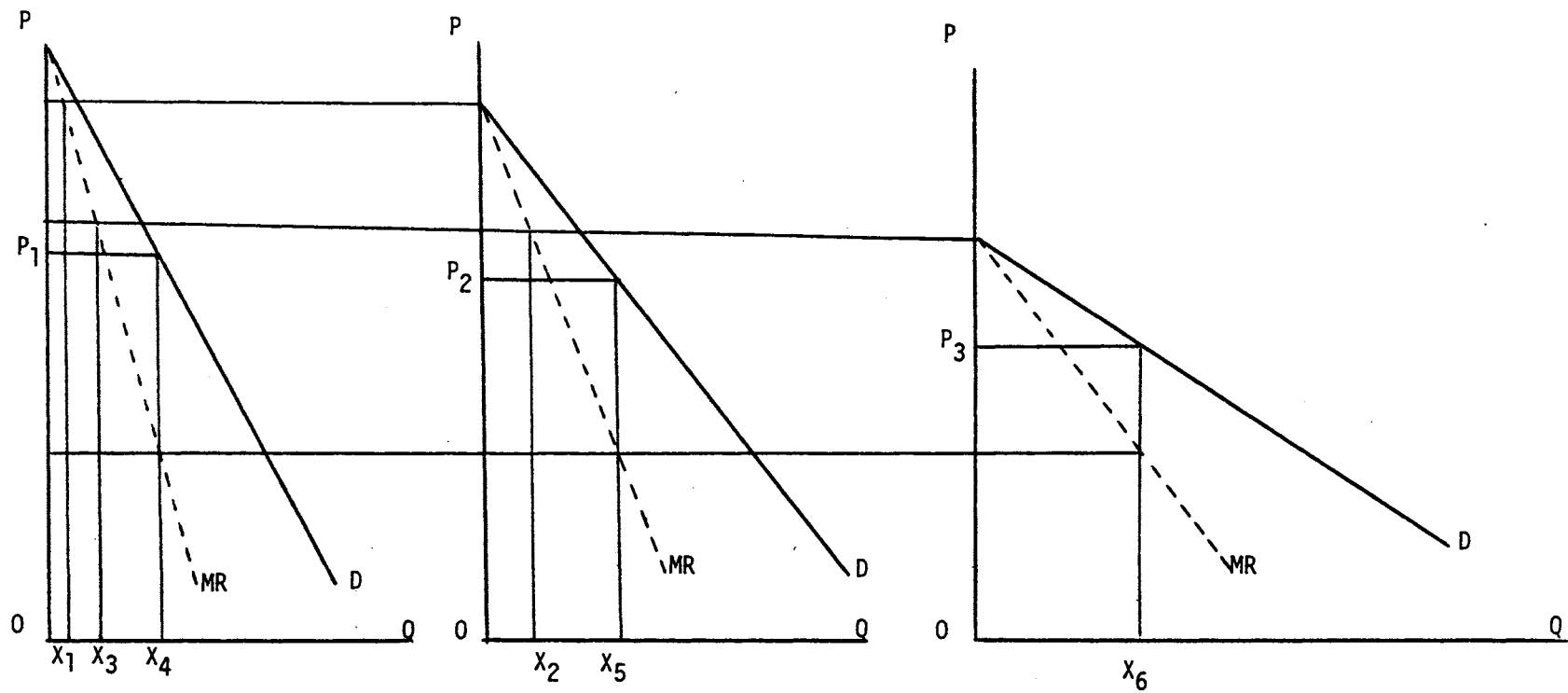


Figure 10. Pricing and Allocation of Sales to Various Markets Under Conditions of Price Discrimination.

by allocating sales so that marginal revenue is the same in all markets, i.e., $MR_1 = MR_2 = MR_3$, then when sales are properly allocated,

$$P_1 - P_1/E_1 = P_2 - P_2/E_2 = P_3 - P_3/E_3$$

or

$$P_1(1 - 1/E_1) = P_2(1 - 1/E_2) = P_3(1 - 1/E_3).$$

From this it is obvious that the prices can be different only if the elasticities of demand are different. If the elasticities were the same, the prices would be the same. There would be no price discrimination. It should also be noted that the price charged in the various markets decreases as the elasticity of demand increases. This is why one would expect that the Oklahoma Highway Department would be charged more for asphalt than would private contractors and industrial users, and why that group would be charged more than out-of-state users. Incidentally, this is the same analytical model that the defense applied in the case to explain differences in prices between the various markets for the product.

Even if one could ignore the above-enumerated factors causing different elasticities of demand among the various buyers, the same discriminatory pricing results would obtain. Prices to out-of-state buyers would still be below the price charged the Oklahoma Highway Department. For as Professor Harry W. Richardson has noted, in the "real world" one frequently finds that the profit-maximizing monopolist finds it to his advantage to discriminate against buyers located nearer him.²⁰ This can easily be illustrated. Assume that two buyers have

²⁰ Harry W. Richardson, Regional Economics (New York, 1969), pp. 21-22.

linear and identical demand curves for the product. But assume that one of the buyers, B, is located at the refinery gate. The other buyer, A, is located some distance away. Curves D_a and D_b in Figure 11 represent the demand curves for buyers A and B, respectively. Because of the fact that buyer A must pay the cost of transporting the product, his demand curve is shifted downward by an amount equal to these costs. The unit transportation cost will be treated as a constant. Thus the vertical distance between D_a and D_b is the transportation cost per unit of product between the two locations. The horizontal distance between the two curves represents the difference in quantity demanded by the two buyers. The distant buyer will buy less because the delivered price he must pay is more when both firms are charged the same f.o.b. price. The two curves have the same slope because, aside from transportation costs, the demands are identical.

By adding in the appropriate marginal revenue curves and a marginal cost curve (which for simplicity is assumed to be constant), it is clear that the seller has an incentive to discriminate against the nearer buyer. By equating marginal revenue to marginal cost in each market, he will find that he should charge buyer A an f.o.b. price of P_a , and buyer B must pay P_b . It is also clear that within any specified range, demand curve D_a is more elastic than D_b . Any given change in price will bring about the same absolute change in quantity demanded on each curve, but the percentage change (and hence elasticity) is greater for curve D_a . Thus once again, the more distant buyer, the one with the more elastic demand, receives the lower refinery price.

The only question to be answered now is how the different markets could be kept apart. How would resales be prevented from ruining this

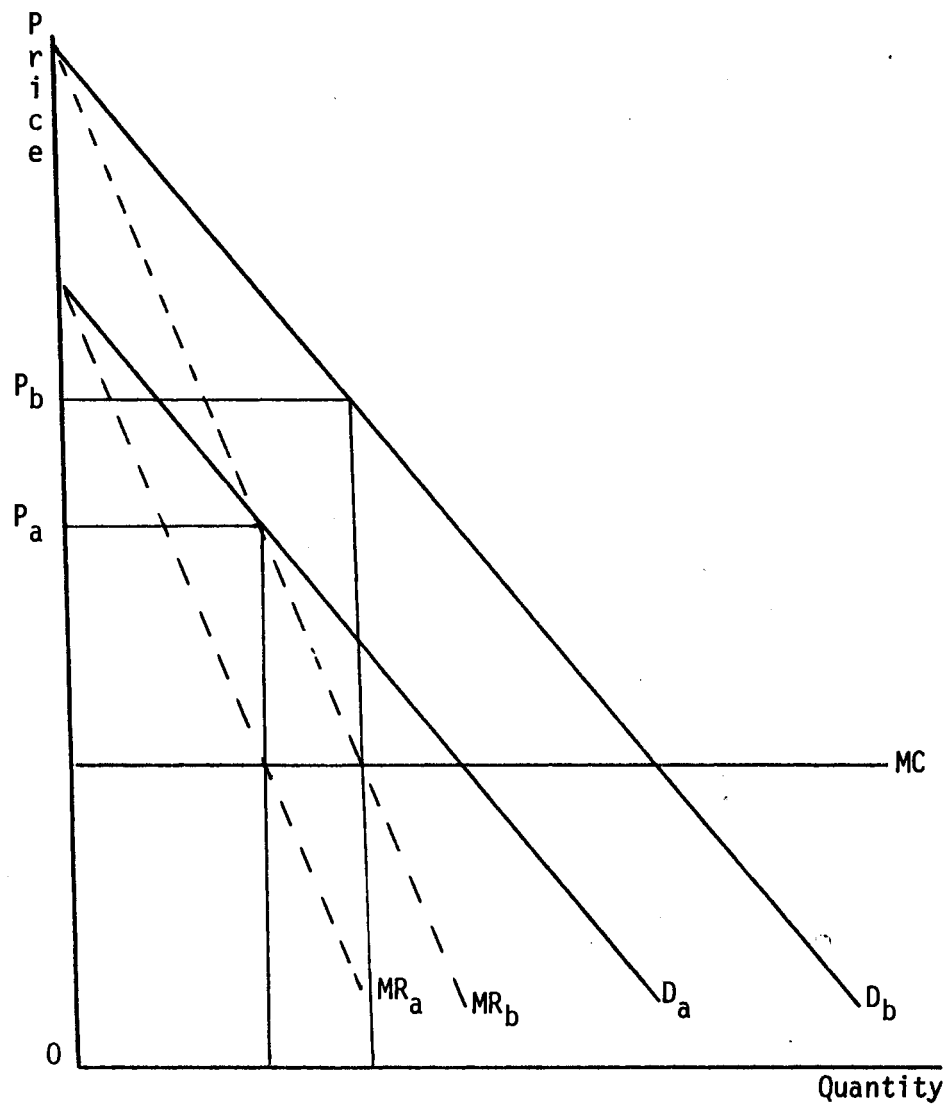


Figure 11. A Geographic Price Discrimination Model.

profitable arrangement? The answer to that question may now be easily seen. Out-of-state buyers, who receive the lowest price on asphalt, are not in a position to resell it for several reasons. First, this group is comprised largely of governmental units, and as such are not profit seeking entities. Thus reselling the product is not their nature. Further, Oklahoma bidding procedures and asphalt specifications would exclude most out-of-staters from reselling for a profit. Last, but not least in importance, is the fact that transportation costs would make resales impossible. Private contractors and industrial users would be prevented from reselling to the Oklahoma Highway Department for much the same reasons. State bidding procedures and asphalt specifications would effectively eliminate them. For this group to be able to submit a bid, they would need blending facilities and an assured constant supply of asphalt. Given the conditions of the State's contract and the uncertainty surrounding the sale of liquid asphalt to the Oklahoma Highway Department, buying the product on the open market to resell to the Department simply is not feasible. Thus the markets could be kept apart easily and discriminatory pricing could be profitably practiced by Oklahoma asphalt suppliers.

Sales to Private and Out-of-State Users

As a result of the existence of both the incentive and opportunity for Oklahoma asphalt suppliers to engage in discriminatory pricing between the several markets, the relatively higher price paid by the Oklahoma Highway Department is easily explained. No collusion is needed to produce such a price structure. And while the great price stability in that market has been discussed, a greater degree of price

flexibility in other markets is also consistent with noncollusive action. One might logically expect stable and identical price quotations to the Highway Department by the same sellers who were simultaneously making price concessions and charging lower prices in the other markets for the product. Consider, for example, the market consisting of private contractors and industrial users. This market differs from the Oklahoma Highway Department market in several important respects, and therein lies the explanation for lower and more flexible prices in the market. What are those differences? First, in quoting a price to a private user, the supplier knows when and how much of the product the user plans to purchase. Thus he is not required to make an open-end price quotation. Second, since the elasticity of demand appears to be greater, the seller may reason that a price reduction will more successfully induce the user to increase his consumption of the product. Third, the supplier may be able to discriminate between firms in this market. A fourth and very important difference is the fact that there is a possibility of making secret price concessions to a potential buyer.

As a consequence of the above differences, greater price flexibility is to be expected in this market. If a seller desired to increase his sales now, what would be the factors he would consider and the likely outcome of his deliberations? Assume, as before, that the seller considers lowering his price in order to work off his excess inventory. In this instance, he could plan to lower his price on some sales or in some market territories without reducing it on all units sold. Not having to "spoil" his own market, the prospect of lowering his price to customers in boundary line territories would appear to be

a fairly attractive alternative. Further, he might expect to escape retaliation from his rivals since his price reduction would not be officially communicated to them. A small price reduction which would allow him to pick up a few marginal customers might well go undetected. Given this set of possibilities, the seller might well decide in favor of the price reduction. Thus one would expect a higher degree of price flexibility in the sale of asphalt to private users than to the Oklahoma Highway Department. Once again, such a result is completely compatible with independent action on the part of the suppliers. No collusion is necessary to produce such a result.

What marketing policies could be expected in the case of out-of-state sales? From the section on intermarket pricing one would expect the price charged out-of-state users of the product to be generally lower than in other markets. But what else might be expected? Suffice it here to make only a few generalizations. Any rigorous analysis of this question which might need exploring can be handled in the next chapter. Oklahoma asphalt suppliers face considerable competition in out-of-state sales. As they move into this market, the Oklahoma firm leaves the tight oligopolistic market at home and moves into a highly competitive situation. Consequently, one would expect Oklahoma suppliers to concentrate their sales efforts on areas in which they might expect to be able to compete most successfully with their rivals. Accordingly, they could generally be expected to avoid competing in surplus asphalt producing areas and concentrate on deficit areas. One might expect sales between surplus states to be small in quantity, infrequent, and to be largely confined to "specialty" products. In general, Oklahoma suppliers might be expected to concede Kansas, a surplus state, to

Kansas suppliers since transportation rates would put them at a competitive disadvantage there. On the other hand, they could be expected to compete vigorously for the Missouri markets. Missouri is a deficit state, having only one refinery which is located at Sugar Creek. Oklahoma firms would be on relatively equal terms with refineries from Kansas and other surplus areas in the Missouri market. They might also be expected to sell into the northern deficit market areas such as Nebraska, Wisconsin, South Dakota, Iowa, and others. As is explained later, freight rates are so constructed as to make it possible for them to compete successfully with other competitors in sales to those areas. But in order to sell there, they would have to lower their refinery price so that the delivered price would be competitive.

Conclusions on Pricing and Sales to and Between the Various Markets

It has been noted in this chapter that Oklahoma asphalt suppliers might have both the opportunity and the incentive to engage in illegal collusive agreements. By acting as a cartel, the firms might agree to fix prices and to divide market territories, thereby avoiding competition and enabling them to reap monopoly profits. Comparing factors surrounding the sale of liquid asphalt to the Oklahoma Highway Department with factors considered conducive to conspiracy, there is some evidence that this market is conspiracy-prone. There is also some evidence that such a conspiracy in this industry could prove viable over time. On the other hand, it has been shown that a geographically segmented market and identical price quotations could result from noncollusive action. As a matter of fact, the price quoted to the Oklahoma Highway Department could be expected to be rather high

(relative to the other markets) and price concessions unlikely, whether the conduct of the sellers were collusive or noncollusive. Furthermore, one would expect a geographically segmented market in either instance. One would also logically expect that price discrimination would be practiced in the absence of, as well as in the presence of, an illegal conspiracy.

There is an important conclusion to be drawn from this. Virtually identical performance may result from noncollusive conduct as from collusive conduct. As a result of this, no inference as to conduct may be drawn from the performance to be expected within this particular market. But it is important to note what this conclusion does and does not mean. First, it does seem to indicate that on the basis of market structure and expected market performance, a strong theoretical argument cannot be made that only an illegal conspiracy could have produced the expected performance. Theory would indicate that the same performance could have resulted from legal or illegal conduct. This conclusion does not, however, answer the question of whether or not Oklahoma asphalt suppliers were acting collusively. Neither does it provide a confirmation or denial of either hypothesis to be tested in this paper. Only by examining all the State's evidence of the alleged conspiracy and seeing if it can be logically explained as a result of legal conduct can the hypotheses be confirmed or rejected.

CHAPTER IV

ANALYSIS OF THE CASE AND CONSIDERATION OF THE HYPOTHESES

On October 4, 1965, the State of Oklahoma filed a private treble damage suit against ten asphalt suppliers in the United States District Court for the Western District of Oklahoma. The State alleged that the firms had acted in violation of provisions of the Sherman Antitrust Act of 1890.¹ This chapter examines several aspects of that case. First, the defendants and co-conspirators in the case are identified. Second, the charges against the firms are explained. Then, attention is turned to those factors which led the State of Oklahoma to ultimately initiate proceedings. Next, the State's development of the case is analyzed in some detail. The method by which the State attempted to prove the

¹Actually, the then Attorney General of Oklahoma, Charles Nesbitt, filed separate state and federal price fixing suits in 1965 against ten major oil companies seeking total damages of \$37.5 million. The record shows, however, that early in 1966, District Court Judge Joann McInniss approved a motion by one of the defendants to stay proceedings in the state court pending outcome of the federal court case. The federal suit finally came to trial in late 1968 and was settled early in 1969.

At the behest of the State, the case was tried by jury. The right to demand a jury trial is, of course, guaranteed by the Constitution and is set forth in Federal Rule 38 of the rules governing civil proceedings. See Paul R. Hays, Cases and Materials on Civil Proceedings (Brooklyn, 1947), p. 475.

charges and the evidence presented in so doing receives special attention. Following that, consideration is turned to the defense. The paper focuses on the way in which the defense attempted to counter the evidence and arguments put forth by the State. Finally, judgment must be made concerning the accuracy or inaccuracy of the two hypotheses stated in Chapter I.

Parties to the Suit and Charges

Named as defendants in the case, State of Oklahoma v. Allied Materials Corporation, et al., were Phillips Petroleum Company, Kerr-McGee Corporation, Sunray DX Oil Company, Inland Asphalt, Inc., Riffe Petroleum Company, Baxter Land Corporation, and Redstone Asphalt and Petroleum Company.² Allied Materials Corporation, Apco Oil Corporation, and Monarch Refineries, Inc., were named as co-conspirators. Additionally, the State named asphalt producing refineries in Kansas as co-conspirators with respect to certain of the charges. These refineries include Skelly Oil Company, Mobil Oil Company, American Petrofina, Derby Refining Company, Consumers Cooperative, and once again, Phillips.

The State of Oklahoma alleged that the defendants and co-conspirators violated the Sherman Act and damaged the State in four ways. Following is a list of the charges made by the State:

²It should be recalled that the corporate histories of some of the defendants are quite intertwined. As noted in Chapter II, Riffe and Inland are both wholly-owned subsidiaries of the same parent company. Further, Inland, Redstone and Baxter Land Corporation are all corporate names at one time or another for the same supplier.

1) The State alleged that the defendants and co-conspirators "conspired and agreed to fix, stabilize and control the price at which asphalt would be sold in and to the State of Oklahoma."

2) The State further alleged that the defendants and co-conspirators in Oklahoma "agreed to split up and allocate among themselves the customers and territories within the State of Oklahoma on the sale of liquid asphalt."

3) A third allegation by the State was that the Oklahoma asphalt suppliers and the Kansas asphalt suppliers "agreed among themselves that Oklahoma suppliers would not market in Kansas, and Kansas suppliers would not market in Oklahoma."

4) Finally, the State alleged that the defendants and co-conspirators in Oklahoma "conspired to monopolize the sale of asphalt within and to the State of Oklahoma."³

Factors Leading to the Filing of Charges

In order to analyze the first hypothesis posed in this study--namely, that because of some special market conditions peculiar to the liquid asphalt industry, that industry is particularly susceptible to antitrust involvement--it is necessary to look at factors leading the State of Oklahoma to suspect the existence of a conspiracy and to file charges. Obviously, the most formal and direct way of addressing the issue would be to obtain the information directly from the person who actually made the decision to file charges in the case. Accordingly,

³State of Oklahoma v. Allied Materials Corporation, et al., pp. 25-40.

several attempts were made to elicit a response from the person who had been Attorney General of Oklahoma at the time of the initiation of proceedings. Three separate attempts to obtain a statement of factors leading the State to proceed with the case yielded no results. But while a formal statement by the Attorney General who filed the charges would have been interesting, the absence of such a statement presents no insurmountable problem in getting at the question at hand. A study of the history of the case provides a clear profile of the decision to prosecute. There seem to have been three factors of supreme importance influencing the State of Oklahoma to file charges. First, the State had long been aware of, and troubled by, the identity of bids by the defendants. As early as 1958 the State Highway Commission asked the defendants and alleged co-conspirators to explain their prices. One can easily imagine an individual with little expertise in such matters as viewing identical price quotations on so-called "secret sealed bids" as strong evidence of conspiracy. Add to this a second factor, the existence of a trade association, the Asphalt Refiners Association, and the State prosecutor might visualize the machinery for carrying out the conspiracy. The third factor appears to have been the influence of proceedings against several of the same firms in Missouri.⁴

⁴In the Missouri litigation, eighteen oil companies and seventeen of their officials were arraigned on September 8, 1965, in St. Louis on criminal charges for rigging prices on sales of liquid asphalt to the State of Missouri. All defendants in the case entered nolo contendere pleas. Fines totaling \$609,500 were levied. Each individual also received a six month prison sentence which was suspended and replaced with a one year probation. Companies and/or officials common to the Missouri and Oklahoma proceedings include Allied Materials, Apco, Phillips, Riffe, and Sunray DX. For a full account of the Missouri proceedings, see The Oil and Gas Journal, August 2, 1965, p. 82, and Nov. 29, 1965, p. 46.

Indictments were handed down in the Missouri price fixing case on July 22, 1965. Charges were filed in the Oklahoma case on October 4, 1965. Such timing hardly seems coincidental. When it is recalled that the alleged conspiracy in Oklahoma dated back to 1954, the mere two month time lapse between the two case dates seems quite significant. Given these three factors, the State's decision to file charges is not at all mysterious.

While the three factors listed in the foregoing analysis might not correlate perfectly with a listing of factors which might have been prepared by the Attorney General, they probably offer at least as good an explanation of the forces behind the decision to file charges as could have been obtained through a formal statement by that person.

Development of the State's Case

As a way of presenting the State's case, each allegation is examined here individually, and, for each allegation, the general contention made by the State is summarized. That is followed by an explanation of the evidence and analysis presented by the State in support of its allegation. The task of critically evaluating the State's arguments and evidence is deferred until the section dealing with the defense.

Allegation I

General Contention

The State's contention concerning the price fixing conspiracy was that it began with the formation of the Asphalt Refiners Association. That association was incorporated January 12, 1954, having as its

charter members Kerr-McGee, Allied Materials, Monarch, Sunray DX, and Anderson-Prichard (Apco). Riffe joined the Association in 1957 at the time of the company's incorporation. Phillips joined in 1958 when it began producing specification asphalt and selling it to the State of Oklahoma and to Oklahoma contractors. No out-of-state asphalt supplier was ever a member of the Asphalt Refiners Association.

In developing its case, the State averred that prior to the formation of the Asphalt Refiners Association, the suppliers submitted bids to the State which were different and which fluctuated up and down. But after 1954, all bids received by the State were fixed at a high level, and were virtually always identical quotations. The State contended that the odds against accidentally receiving simultaneous and equal price increases on a secret, sealed bid (as happened on February 21, 1956) were "something like ten million to one." As support for its position that such a phenomenon must have occurred as the result of a conspiratorial agreement, the State pointed out that the members of the Asphalt Refiners Association frequently met in their Oklahoma City headquarters just prior to contract lettings.

As further support for its position, the State attempted to demonstrate that Oklahoma asphalt suppliers had submitted bids into other states during the period which exhibited a competitive nature. The hypothesis was that if Oklahoma suppliers always submitted high, identical, and inflexible bids to the State of Oklahoma while submitting lower and flexible bids into distant markets, that must be the consequence of a price fixing agreement at home.

Evidence and Argument

To support its contention that the pricing and sales policies of Oklahoma asphalt suppliers could have resulted only from a conspiracy, the State centered its economic arguments around its expert economic witness, Mr. Peter Max. Mr. Max is an economist with the National Economic Research Association in Washington, D.C., and had had prior experience as an expert witness in antitrust cases.

The State began by attempting to convince the jury that the bidding done by Oklahoma asphalt suppliers was not consistent with competitive pricing. To accomplish this, Mr. Max was asked to contrast competitive with non-competitive pricing behavior. The response was that prices would ordinarily be expected to fluctuate under competitive conditions. They would show some volatility, and would differ between sellers. As sellers sought larger shares of the market, one would find fluctuating and nonidentical prices. But in a non-competitive market, virtually the opposite could be expected. Mr. Max testified that frequently there would be price uniformity and price stability. He stated that when prices did change, most often all suppliers would simultaneously announce the change, or else all firms would quickly follow the price leader. He stated that such noncompetitive prices would usually remain stable over long periods of time, but with all suppliers moving together when they did change--usually increase.⁵

Correspondingly, Mr. Max testified that under a secret, sealed bid situation, one would similarly expect price fluctuations and differences

⁵State of Oklahoma v. Allied Materials Corporation, et al., Trial Transcript, XXIV, p. 2576.

among bidders in a competitive market. But in a non-competitive market one could frequently expect identical bids. Or perhaps in cases in which the conspirators had agreed on the winner ahead of time, that firm would submit the low or winning bid with the others submitting higher, "shadow" bids.⁶

Proceeding from that point the State asked Mr. Max to examine bids by Oklahoma asphalt suppliers to the State of Oklahoma and to contrast those bids with out-of-state bids by the same suppliers. In order to put his analysis in perspective, a brief review of the history of bids submitted to the Oklahoma Highway Department and to the various other states is necessary.

Bids to the Oklahoma Highway Department⁷

A study of the history of bids to the Oklahoma Highway Department by Oklahoma asphalt suppliers reveals the following: From 1948 to 1954, there were variations in the bids. No identity of bids was noticed until the bid opening of January 5, 1954. It was on that date that the Highway Department found that all suppliers had submitted identical bids of nine cents a gallon on RC asphalt. It should be explained also that at that time the Oklahoma Highway Department procured its own materials. Whenever the Department needed asphalt, its purchasing agent sent out

⁶Ibid., XXIV, pp. 2577-2578.

⁷This information was obtained from numerous exhibits plus numerous and scattered bits of testimony in the trial. The primary sources, however, are taken from the opening statement by Mr. Burck Bailey, who represented the State, Trial Transcript, I, pp. 26-30; the testimony of Mr. Dean Nourse, purchasing agent for the Oklahoma Highway Department, Ibid., II, pp. 152-195, III, pp. 196-202, 238-239; and Plaintiff Exhibit Nos. 1, 2, 3, 4, 5, 6.

invitations for bids from all who had requested to be put on the bid list. These were so-called "spot bids." The Highway Department called for f.o.b. refinery quotations on a specified quantity for a particular job. It was not until after Central Purchasing began procuring materials for the State in 1960 that the bidding procedure described in Chapter II came into effect.

From 1954 until February of 1956, MC asphalt bids were always at 8.75 cents per gallon. On a February 7, 1956 opening, the bids were still uniformly 8.75 cents. But two weeks later, on February 21, bids were opened and all suppliers had bid an identical 9.25 cents per gallon on MC asphalt. The price remained at that level until the opening of January 15, 1957. On that opening, it was found that Kerr-McGee had raised its price on MC one cent per gallon to 10.25 cents. On the next opening two days later, all suppliers except Anderson Prichard (Apco) followed suit. Apco followed one opening later on January 24, 1957. From that time on, with one exception, all bids remained identical at 10.25 cents per gallon on MC asphalt. The only departure from that price was in September, 1962 when Riffe lowered its bid to 10.20 cents a gallon from its Ardmore plant.

Out-of-State Bids

Rather than attempt to give a verbal accounting of out-of-state sales by Oklahoma asphalt suppliers, a series of tables is used to present that information. Table IV gives all out-of-state asphalt sales of 100,000 gallons or more by Kerr-McGee from its Wynnewood refinery, by Riffe from Ardmore, and by Apco from Arkansas City, Kansas and Cyril, Oklahoma for the period covering October, 1961 to October, 1965. Tables V through XI present data on bids from selected Oklahoma and Kansas firms.

TABLE IV

ASPHALT SOLD BY KERR-McGEE, APCO, AND RIFFE OUTSIDE OKLAHOMA
OCTOBER 1961 TO OCTOBER 1965

Bidder (a)	Amount (gallons)	Average Price (b) (cents per gallon)	
SALES TO: MISSOURI			
Kerr-McGee	11,106,294	06.577	
Apco (A)	11,001,039	06.834	
Riffe	5,941,834	06.137	
SALES TO: MINNESOTA			
Kerr-McGee	7,635,744	05.750	
Apco (A)	409,211	05.463	
Riffe	205,292	05.201	
SALES TO: SOUTH DAKOTA			
Kerr-McGee	2,657,042	05.827	
Apco (A)	63,315	05.216	
Riffe	83,943	05.565	
SALES TO: IOWA			
Kerr-McGee	24,010,749	05.096	
Apco (A)	6,248,391	08.166	
Riffe	11,403,835	05.216	
SALES TO: NEBRASKA			
Kerr-McGee	7,434,671	06.023	
Apco (A,C)	1,073,710	06.161	
Riffe	244,314	06.023	
Sales By	Destination	Amount (gallons)	Average Price (cents per gallon)
Apco (C)	New Mexico	207,145	07.498
Apco (C)	Texas	12,948,232	08.553

TABLE IV (continued)

Sales By	Destination	Amount (gallons)	Average Price (cents per gallon)
Riffe	Wisconsin	16,871,713	04.752
Riffe	Arkansas	1,008,861	07.616
Riffe	Illinois	228,432	06.272
Riffe	Michigan	568,535	05.751
Riffe	New Mexico	1,609,887	05.135
Riffe	Ohio	2,584,138	05.350
Riffe	Texas	45,856,352	06.091
Kerr-McGee	Illinois	5,927,296	05.211
Kerr-McGee	Indiana	888,484	05.159
Kerr-McGee	Kentucky	764,713	05.155
Kerr-McGee	Michigan	114,488	06.442
Kerr-McGee	New Mexico	23,647,184	04.948
Kerr-McGee	Ohio	3,087,777	05.492
Kerr-McGee	Tennessee	508,229	06.282
Kerr-McGee	Texas	16,768,934	07.538
Kerr-McGee	Wisconsin	16,759,922	04.514

(a) Some of the Kerr-McGee sales were made through that company's broker, Lake Asphalt and Petroleum Company. Apco (A) denotes sales from Arkansas City. Apco (C) denotes sales from Cyril.

(b) Average price in each case refers to the net back price. Net back refers to the delivered price less freight.

Source: State of Oklahoma v. Allied Materials Corporation, et al., Plaintiff Exhibit No. 85.

TABLE V
 ASPHALT BIDS TO STATE OF MINNESOTA FROM SELECTED
 REFINERIES IN KANSAS AND OKLAHOMA
 OCTOBER 1961 TO OCTOBER 1965

Year	Bidder	Delivered Price Bid (cents/gallon)	Freight (cents/gallon)	Net Back (cents/gallon)	Distance (miles)
BIDS TO: PIPESTONE					
1961	Kerr-McGee	10.67	04.20	06.47	733
1961	Mobil	10.88	03.80	07.08	513
1961	Riffe	10.96	04.20	06.76	779
BIDS TO: ROCHESTER					
1962	Riffe	10.88	04.04	06.84	836
1962	Kerr-McGee	10.85	04.04	06.81	790
1962	Mobil	10.58	03.88	06.70	559
1963	Riffe	10.04	04.04	06.00	836
1963	Mobil	09.46	03.88	05.58	559
BIDS TO: AUSTIN					
1964	Riffe	09.96	03.96	06.00	792
1964	Kerr-McGee	10.88	03.96	06.92	746
BIDS TO: WORTHINGTON					
1965	Riffe	10.05	03.96	06.09	771
1965	Kerr-McGee	09.97	03.96	06.01	709
1965	Mobil	10.17	03.72	06.45	489

Bids taken per gallon f.o.b. destination. All bids shown are on MC type. Asphalt Distances are rail miles from origin to destination.

Source: State of Oklahoma v. Allied Materials Corporation, et al., Plaintiff Exhibit No. 78.

TABLE VI

ASPHALT BIDS TO STATE OF SOUTH DAKOTA FROM SELECTED
REFINERIES IN KANSAS AND OKLAHOMA
OCTOBER 1961 TO OCTOBER 1965

Year	Bidder	Delivered Price Bid (cents/gallon)	Freight (cents/gallon)	Net Back (cents/gallon)	Distance (miles)
BIDS TO: SIOUX FALLS AREA					
1962	Kerr-McGee	09.28	03.96	05.32	707
1962	Skelly	10.02	03.72	06.30	487
1964	Riffe	09.99	04.12	05.87	681
BIDS TO: CENTERVILLE AREA					
1962	Riffe	09.54	03.96	05.58	735
1964	Skelly	09.55	03.72	05.83	491
1965	Skelly	10.20	03.72	06.48	491
1965	Kerr-McGee	09.96	03.96	06.00	711
1965	Riffe	10.24	03.96	06.28	757
BIDS TO: CLARK AREA					
1963	Riffe	09.45	04.20	05.25	849
1963	Mobil	09.30	03.88	05.15	583
1963	Skelly	09.62	03.88	05.74	583
1963	Kerr-McGee	09.38	04.20	05.18	803
1964	Mobil	09.76	04.04	05.72	630
1964	Kerr-McGee	09.89	04.20	05.69	713
BIDS TO: HOT SPRINGS AREA					
1962	Mobil	08.20	04.04	04.16	656
1962	Mobil	09.04	04.20	04.84	726

Bids taken per gallon f.o.b. destination. All bids shown are on AC type asphalt except bids in 1965 which are on MC type asphalt.

Source: State of Oklahoma v. Allied Materials Corporation, et al., Plaintiff Exhibit No. 79.

TABLE VII
 ASPHALT BIDS TO STATE OF IOWA FROM SELECTED
 REFINERIES IN KANSAS AND OKLAHOMA
 OCTOBER 1961 TO OCTOBER 1965

Year	Bidder	Delivered Price Bid (cents/gallon)	Freight (cents/gallon)	Net Back (cents/gallon)	Distance (miles)
BIDS TO: CORYDON					
1962	Mobil	10.65	03.24	07.41	327
1962	Skelly	09.75	03.24	06.51	327
1962	Derby	09.70	03.24	06.50	357
1962	Consum. Coop	11.00	03.48	07.52	403
1962	Riffe	09.64	03.48	06.16	581
1962	Kerr-McGee	10.49	03.48	07.01	537
BIDS TO: WAUKON					
1961	Mobil	12.06	03.88	08.18	544
1961	Skelly	12.00	03.88	08.12	544
1961	Riffe	11.70	03.88	07.66	821
1961	Kerr-McGee	11.85	04.04	07.81	775
BIDS TO: SHENANDOAH					
1963	Mobil	11.49	03.00	08.49	286
1963	Skelly	11.00	03.00	08.00	286
1963	Consum. Coop	10.50	02.76	07.74	277
1963	Riffe	11.52	03.32	08.20	563
1963	Kerr-McGee	10.75	03.32	07.43	517
BIDS TO: ALTOONA					
1964	Mobil	11.32	03.32	08.00	354
1964	Skelly	10.82	03.32	07.50	354
1964	Kerr-McGee	10.60	03.64	06.96	585
1964	Riffe	10.84	03.64	07.20	631
1964	Consum. Coop	11.25	03.32	07.93	384
BIDS TO: KEOSAUQA					
1965	Mobil	11.51	03.56	07.95	420
1965	Skelly	10.50	03.56	06.94	420
1965	Consum. Coop	13.68	03.72	09.96	487
1965	Riffe	11.33	03.72	07.61	674
1965	Kerr-McGee	11.35	03.72	07.63	630

Bids taken per gallon f.o.b. destination. All bids shown on MC type asphalt.

Source: State of Oklahoma v. Allied Materials Corporation, et al., Plaintiff Exhibit No. 80.

TABLE VIII
 ASPHALT BIDS TO STATE OF MISSOURI FROM SELECTED
 REFINERIES IN KANSAS AND OKLAHOMA
 OCTOBER 1961 TO OCTOBER 1965

Year	Bidder	Delivered Price Bid (cents/gallon)	Freight (cents/gallon)	Net Back (cents/gallon)	Distance (miles)
BIDS TO: ANDREW COUNTY					
1961	Skelly	09.50	02.44	07.06	196
1961	Mobil	09.68	02.44	07.22	196
1961	Gen.Asp.(KM)	09.49	02.92	06.57	427
1961	Riffe	09.40	02.92	06.48	473
1961	Consum. Coop	09.55	02.84	06.71	283
BIDS TO: BARTON COUNTY					
1962	Skelly	09.14	01.96	07.18	169
1962	Mobil	09.56	01.96	07.16	169
1962	Kerr-McGee	09.42	02.84	06.58	308
1962	Riffe	09.44	02.84	06.60	348
1962	Apco	09.40	02.04	07.36	186
1962	Derby	09.25	02.20	07.05	196
BIDS TO: COOPER COUNTY					
1963	Skelly	10.08	02.76	07.32	274
1963	Mobil	10.17	02.76	07.41	274
1963	Kerr-McGee	10.00	03.48	06.52	294
BIDS TO: VERNON COUNTY					
1964	Skelly	08.90	01.72	07.18	150
1964	Mobil	09.42	01.70	07.70	150
1964	Kerr-McGee	09.22	02.84	06.38	315
1964	Apco	09.30	02.20	07.10	194
BIDS TO: BATES COUNTY					
1965	Skelly	09.10	02.40	06.70	167
1965	Mobil	09.06	02.40	06.66	167
1965	Kerr-McGee	09.46	02.48	06.62	333
1965	Apco	09.31	02.40	06.91	211
1965	Riffe	09.70	02.40	07.30	377
1965	Am Petrofina	08.71	02.40	06.31	167

Bids taken per gallon f.o.b. destination. All bids shown are on MC type asphalt.

Source: State of Oklahoma v. Allied Materials Corporation, et al.,
 Plaintiff Exhibit No. 60.

TABLE IX
 ASPHALT BIDS TO STATE OF NEBRASKA FROM SELECTED
 REFINERIES IN KANSAS AND OKLAHOMA
 OCTOBER 1961 TO OCTOBER 1965

Year	Bidder	Delivered Price Bid (cents/gallon)	Freight (cents/gallon)	Net Back (cents/gallon)	Distance (miles)
BIDS TO: THAYER COUNTY					
1961	Mobil	09.60	02.44	07.16	228
1961	Gen.Asphalt	09.69	03.24	06.45	484
1961	Riffe	09.63	03.24	06.39	494
1961	Apco	09.73	02.44	07.29	271
1961	Skelly	09.69	02.44	07.25	228
BIDS TO: HALL COUNTY					
1962	Apco	09.91	02.76	07.15	320
1962	Derby	09.81	02.76	07.05	270
1962	Kerr-McGee	10.01	03.56	06.45	496
1962	Mobil	10.05	02.76	07.29	277
1962	Skelly	10.06	02.76	07.30	277
1962	Riffe	10.47	03.56	06.91	542
BIDS TO: HOWARD COUNTY					
1963	Apco			06.00	381
BIDS TO: GAGE COUNTY					
1964	Skelly			06.15	227
BIDS TO: CHASE COUNTY					
1965	Riffe			05.63	671

Bids taken per gallon f.o.b. destination. All bids shown are on MC type asphalt except bids in 1962 which are on RC type asphalt.

Source: State of Oklahoma v. Allied Materials Corporation, et al.,
 Plaintiff Exhibit No. 68.

TABLE X
 ASPHALT BIDS TO STATE OF WISCONSIN FROM SELECTED
 REFINERIES IN KANSAS AND OKLAHOMA
 OCTOBER 1961 TO OCTOBER 1965

Year	Bidder	F.O.B. Refinery (cents/gallon)	Distance (miles)
BIDS TO: DOUGLAS COUNTY			
1961	Riffe	05.74	1033
1962	Riffe	06.00	1033
BIDS TO: ASHLAND COUNTY			
1964	Riffe	05.20	1062
1964	Skelly	06.12	785
1965	Riffe	06.10	1062
1965	Skelly	05.87	785
BIDS TO: VILLAS COUNTY			
1961	Mobil	05.57	860
1962	Mobil	06.07	860
BIDS TO: COLUMBIA COUNTY			
1961	Skelly	06.18	662
1962	Skelly	06.58	662
BIDS TO: JEFFERSON COUNTY			
1963	Mobil	07.49	648
1963	Riffe	07.00	902
1963	Skelly	07.20	648

Bids taken per gallon f.o.b. destination. All bids shown are on MC type asphalt.

Source: State of Oklahoma v. Allied Materials Corporation, et al., Plaintiff Exhibit No. 72.

TABLE XI
 ASPHALT BIDS TO STATE OF COLORADO FROM SELECTED
 REFINERIES IN KANSAS, 1960-1965

Bidder	F.O.B. Refinery	Bid In 1960	Bid In 1961	Bid In 1962	Bid In 1963	Bid In 1964	Bid In 1965
Skelly	El Dorado, Kansas	05.66	07.66	07.66	06.50	06.40	06.70
Mobil	Augusta, Kansas	07.25	07.50	07.50	07.00	07.00	06.45
Derby	Wichita, Kansas	06.00					
Riffe	Shallow Water, Kansas	08.50	09.25	09.00	09.00	09.00	09.25

Bids taken per gallon f.o.b. refinery. All bids shown are on MC type asphalt.

Source: State of Oklahoma v. Allied Materials Corporation, et al., Plaintiff Exhibit No. 66.

Mr. Max on the Competitiveness of Bids on Asphalt
Received by the Oklahoma Highway Department⁸

Analyzing the exhibits concerning price and bid data on sales to the Oklahoma Highway Department and to other states, Mr. Max proceeded to fit his findings into the competitive versus non-competitive framework outlined above. In bids to Northern states, Max explained that they showed no identity, either on a delivered price basis or on a net back basis. This lack of identity was both on a year to year basis by single suppliers, and between suppliers in a given year. He cited numerous examples of a firm raising or lowering its net back and delivered price from one year to the next in order to meet the competition. His conclusion on sales to these other states was that the price and bid behavior by Oklahoma (and Kansas) asphalt suppliers was perfectly consistent with what one would expect to find under competitive conditions. It was contended that in the six Northern states of Iowa, Minnesota, Missouri, Nebraska, South Dakota, and Wisconsin "where . . . these refineries are competing one against the other, and against the Kansas refineries, they [Kerr-McGee, Phillips, Riffe, and DX] sold over 137 million gallons at an average price of 6 cents per gallon."⁹

Contrasting that with sales to the Oklahoma Highway Department, Mr. Max argued that the contrast was striking and irreconcilable in a competitive framework. Where bids and prices had fluctuated from year to year and between firms in other states, they had remained constant

⁸This portion of Mr. Max's testimony appears in the Trial Transcript, XXIV, pp. 2585-2597 and 2604-2612.

⁹Trial Transcript, XXIV, p. 2611.

in Oklahoma since 1957. All bids except one had been identical at 10.25 cents per gallon.

Max dismissed the suggestion that the lower out-of-state prices might have been the result of distress or dump sales by pointing to the quantity involved. He argued that 240 million gallons was such a large quantity that it could not possibly represent distress sales.

To dispell the notion that the behavior of asphalt prices might be due simply to peculiarities of petroleum refined products and not due to lack of competition, the State presented data showing the price behavior of various other refinery products. Plaintiff Exhibit No. 87, taken from Oil Daily, gives the price of MC asphalt on the first day of each quarter for years 1954 through 1965 and compares it with the corresponding price of the following products; No. 1 fuel oil, No. 2 fuel oil, No. 6 fuel oil, kerosene, regular grade gasoline, and diesel fuel. Briefly summarizing that exhibit, it shows that the prices of the other products fluctuated over time. For MC asphalt there was no price flexibility; there was only one price and it did not fluctuate.

Thus the State concluded that the behavior of Oklahoma asphalt suppliers was not consistent with competitive conditions. It asserted that the bids and prices received by the Oklahoma Highway Department could be explained by the existence of a price fixing agreement between the defendants and co-conspirators. Mr. Max summarized fairly well the argument of the State in the following statement:

It's inconceivable to me as an economist that under competitive conditions, individuals making independent and individual decisions would behave in a way such as is evidenced by the data . . . with these tremendous millions of gallons being sold [into] distant markets

at very low prices, while at the same time the price within the State of Oklahoma remained stable and identical at a high level.¹⁰

Allegation II

General Contention

The State's second allegation was directly related to the first. The State alleged that the defendants and co-conspirators in Oklahoma had violated the Sherman Antitrust Act by agreeing to split up among themselves market territories and customers. It charged that this was accomplished by the suppliers' always submitting identical bids.

Evidence and Arguments

The State's attempt to prove its second allegation was based straightforwardly on the following logic:

- 1) Oklahoma is a surplus asphalt producing state.
- 2) Because of that fact, Oklahoma asphalt suppliers were forced to sell some of their product outside the State of Oklahoma.
- 3) The average net back received on out-of-state sales was considerably lower than the price received on sales within and to the State of Oklahoma.
- 4) By lowering its f.o.b. refinery price and absorbing some freight, a firm could capture a greater share of the Oklahoma market-- indeed, even the entire market--and still receive a higher price for its product than it was receiving out-of-state.

¹⁰Trial Transcript, XXIV, pp. 2611-2612.

5) Adoption of such a policy would be consistent with the sales policies which Oklahoma asphalt suppliers claimed their companies followed. Failure to do so would be inconsistent with their own stated policies.¹¹

The State produced a series of exhibits in the form of maps showing the effect of the identical quoted prices, and the consequences of different price structures. Since the State of Oklahoma always buys asphalt so as to minimize its delivered product cost, and since all f.o.b. refinery price quotations were identical, then the State always had to purchase its asphalt from the supplier nearest the job site. This, of course, produced a segmented market. Each seller was guaranteed all sales to job locations lying on his side of points equidistant between his facilities and those of each of his competitors. The State argued that this was merely a part of the grand design of the conspirators. By so allocating market territories, the conspirators could operate monopolistically without fear of encroachment by other refineries. By thus avoiding competition within the state, they could maintain their prices at a high and noncompetitive level.

The State attempted to show what would have happened if the firms had indeed acted independently rather than acting in concert by use of the above-mentioned exhibits. Using the intrastate freight rates

¹¹Sales policies of the various companies were described by a number of company officials including: Robert S. Ketcham, asphalt sales manager for Apco; Jack Mitchell, asphalt sales manager for Kerr-McGee; Marshall Hardy, asphalt sales manager for Sunray DX; and others. See Trial Transcript, XIX, p. 2067f, XXI, p. 2266f, and XXIII, p. 2408f. For a summary of those stated policies, see XXIV, pp. 2578-2585. In general, company officials indicated that they liked to sell as close to their plants as they could, tried to get the best and most profitable price they could, and tried to sell their asphalt in the best market.

established in Oklahoma by the Corporation Commission, the State attempted to prove that any one supplier could have captured the entire State of Oklahoma market and would have profited by so doing. The question posed by the State was in these terms: "How could a firm take the whole market knowing everyone is bidding 10.25?" A partial review of the answer to that question reveals these findings:¹² Bidding from its Cyril refinery, Apco could reduce its refinery price sufficient to overcome 160 miles of freight cost and encompass the entire market. This means that Apco would have had to reduce its refinery price to 7.93 cents per gallon, absorbing freight in the amount of 2.32 cents per gallon. Kerr-McGee, located at Cushing and Wynnewood, could overcome its locational factor by reducing its refinery price sufficient to compensate for ninety miles haulage. Ninety miles freight is 1.68 cents per gallon. Thus with a refinery price of 8.57, Kerr-McGee could have captured the entire market. Sunray DX in Tulsa is located 190 miles from its most distant competitor. Thus by absorbing freight of 2.48 cents and charging a refinery price of 7.77 cents per gallon, DX could have encompassed the market. From Okmulgee, Phillips would have had to drop its price to 7.85 (allowing 2.40 cents freight for 170 miles) in order to take the entire market. Riffe could have taken the State by bidding 8.17 cents from Ponca City or 8.49 cents from Ardmore. Comparing these possible net backs with those shown in Table IV for out-of-state sales would seem to make the State's proposed price reductions very attractive and in the best interests of the State and the price cutting firm. It

¹²The above question and the following responses are taken from the State's questioning of Mr. Dean Nourse, Trial Transcript, II, pp. 211-224. Supporting exhibits are Plaintiff Exhibits Nos. 43-47.

should be emphasized, however, that such conclusions are based on a constant 10.25 cents per gallon bid by all other refineries.

Allegation III

General Contention

The State's third allegation that asphalt suppliers in Oklahoma and Kansas agreed among themselves not to market in each other's states was built around the almost complete absence of shipments between the two states. Since the State was only interested in establishing damages to the State of Oklahoma, major emphasis was placed on the lack of bids by Kansas refineries into Oklahoma. The State's primary strategy was to show that such behavior by Kansas firms could logically be explained only in the context of an interstate conspiracy. It did note, however, that Oklahoma refineries virtually never sold into Kansas (and never to the State of Kansas), but sold nearly to the Canadian border. The failure of Oklahoma firms to bid into Kansas, it was contended, could only be explained as reciprocal to the Kansas firms' actions.

Evidence and Arguments

Much of the evidence used by the State in its attempt to prove the existence of a conspiracy between Oklahoma and Kansas refineries is contained above in Tables IV through XI. These bids and sales of Kansas refineries were analyzed in light of the close proximity of several of the refineries to the Oklahoma market. Reviewing briefly, it will be recalled that Apco operates an asphalt producing refinery in Arkansas City, just six miles north of the Oklahoma-Kansas line. Mobil operates a plant at Augusta, some 45 miles above the Oklahoma border, which

annually produces around 80 million gallons of asphalt. And Skelly operates an asphalt producing refinery in El Dorado, 65 miles away from Oklahoma. Not one of these refineries--or any other Kansas refinery--ever submitted a bid or sold asphalt to the State of Oklahoma. All during the period covered by the suit, MC type asphalt was selling at 10.25 cents per gallon in Oklahoma.

A brief examination of some of the figures shown by the exhibits will make the thrust of the State's argument quite clear. Plaintiff Exhibit No. 85 reveals such sales as nearly half a million gallons of asphalt being sold by Apco from Arkansas City into Minnesota at an average net back of 5.463 cents per gallon. From the same plant Apco sold some six and a quarter million gallons of asphalt into Iowa at an average net back of 8.166 cents. During the same period of time, Apco sold no asphalt into Oklahoma, just six miles away. Plaintiff Exhibit No. 79 reveals bids by Mobil reaching into the southwestern part of South Dakota, over 700 miles from its Augusta refinery. A 1965 bid by Mobil into that area carried a delivered price of 9.04 cents and a net back of only 4.84 cents per gallon. The same exhibit shows numerous bids by Skelly into South Dakota. For example, Skelly bids to Centerville, 491 miles from El Dorado, in 1964 and 1965 carried delivered prices of 9.55 and 10.20 cents with net backs of 5.83 and 6.48 cents per gallon.¹³ Plaintiff Exhibit No. 72 shows Skelly bidding into northern Wisconsin, some 785 miles away from El Dorado. Skelly bids into Ashland County in 1964 and 1965 show net backs of only 6.12 and 5.87 cents per gallon. The exhibit also reveals instances of Mobil

¹³The 1964 bid of 9.55 cents was on AC type asphalt which was selling for 9.75 cents in Oklahoma at the time.

bidding as far as 860 miles from Augusta at net backs of 5.57 and 6.07 cents. And as the State continually reminded the jury, while submitting bids and selling asphalt at very low prices into these distant markets, Apco, Mobil, and Skelly submitted no bids and sold no asphalt to Oklahoma, just 6, 45, and 65 miles away, respectively.

Another exhibit which the State emphasized heavily was Plaintiff Exhibit No. 66, showing bids into Colorado. The State considered this exhibit particularly important because of the fact that the State of Colorado took bids in the same manner as the State of Oklahoma--f.o.b. refinery. That exhibit shows bids by Mobil, situated 295 miles from the Colorado border, quoting f.o.b. refinery prices ranging from a low of 6.45 cents to a high of 7.50 cents per gallon on MC type asphalt. Skelly, even further away from Colorado, submitted bids ranging as low as 5.66 cents to a high of 7.66 cents. Once again, these bids were during the years 1960 to 1965, when the f.o.b. refinery price in Oklahoma was a constant 10.25 cents. Such action, the State argued, simply was not compatible with free and open competitive conditions. For, as the State showed, Oklahoma's southernmost refineries lay nearer El Dorado, Augusta, and Arkansas City than did the Colorado market. Thus, the State suggested, if Skelly, Mobil and Apco had submitted bids of 6 or 8 cents per gallon to the State of Oklahoma, they could have sold significant amounts in that market with better net backs than they were receiving in Colorado and the northern states.¹⁴

¹⁴Trial Transcript, I, pp. 38-39; XLII, p. 4677, Threads of this contention may be found throughout the State's presentation of its case.

The State went on to point out that Oklahoma asphalt suppliers never submitted bids to the State of Kansas. Once again, the previously mentioned exhibits were used to show bids by Oklahoma firms into Iowa, Minnesota, Wisconsin, Nebraska, Missouri, and various other states. Why, the State asked, would Oklahoma firms "leap-frog" Kansas while absorbing freight of more than four cents in instances to bid into the northern states? Its answer, of course, was a collusive agreement among the conspirators.

To be completely accurate, it should be noted that there were minor instances of asphalt shipments crossing the Oklahoma-Kansas line going each direction. The record does show some sales by Oklahoma refineries into the State of Kansas. For example, Phillips shipped some small quantities of asphalt into Kansas from Okmulgee. For the most part, however, these were "specialty" products, such as emulsified asphalts. As for the size of the shipments, they were quite small, amounting to only 47,000 gallons in 1963, 42,000 gallons in 1964, and 104,000 gallons in 1965. Phillips also shipped 76,000 gallons of MC into Kansas in 1963. But none of these shipments by Phillips represented sales to the state of Kansas. All sales were to a broker. Aside from the Phillips sales, there were a few Oklahoma-to-Kansas sales made by Riffe. But, once again, such sales were rare and involved very small quantities. A quick review of the record of Kansas-to-Oklahoma sales reveals a similar pattern of small and infrequent shipments. For example, several defendants' exhibits, Nos. R95-R99, show sales from Shallow Water into the Oklahoma panhandle. The quantities once again are small; 6,180 gallons of MC-1, 6309 gallons of MC-1, 5452 gallons of RC-2, 13,880 gallons of AC-5, 5,401 gallons of RC-4. None of these sales into

Oklahoma was to the State of Oklahoma. Thus, the State's contention that Oklahoma refineries did not bid or sell to the State of Kansas and that Kansas refineries neither submitted bids nor sold to the State of Oklahoma remains intact.¹⁵

As a concluding point to show that nothing except a collusive agreement kept Kansas firms from bidding into the higher priced Oklahoma market, the State pointed out that since its filing of the suit, in just two years the Kansas refineries had sold just less than five million gallons into Oklahoma.¹⁶ This, the State argued, demonstrated that the only barrier preventing Kansas firms from selling into Oklahoma all along had been the existence of a collusive, market allocating agreement between refineries in the two states.

Allegation IV

The State's fourth allegation that the defendants and co-conspirators conspired to monopolize the sale of asphalt in the State of Oklahoma is simply a logical outgrowth from the other charges. To the extent that the State proved the first three charges, it also provided support for this last allegation. Thus, it is not necessary to present a detailed discussion of new evidence and arguments in this section.

The basic points in the State's argument of this allegation are:

1) Until the suit was filed, no one from outside Oklahoma ever sold asphalt to the State.

¹⁵See Trial Transcript, II, p. 143, XLIV, p. 4737 for a more complete discussion of sales between the two states.

¹⁶Trial Transcript, XLIV, p. 4765.

2) With a single exception, no one outside the State of Oklahoma ever sold asphalt to a contractor within the State of Oklahoma.

3) No one but Oklahoma asphalt suppliers were ever members of the Asphalt Refiners Association.

4) Only members of the Asphalt Refiners Association ever sold asphalt to the State of Oklahoma.

5) These facts, along with the evidence and arguments presented relative to the other allegations make it clear that "the defendants and co-conspirators had the power and the intent to exclude competition from Oklahoma and that they exercised that power."¹⁷

Additional Material Presented by the State

Certain of the arguments presented by the State cannot readily be classified as support for any particular allegation but, nevertheless, constitute an important part of the plaintiff's case. In general, these arguments were aimed at convincing the jury of the plausibility, indeed the probability, that a conspiratorial agreement existed between the respondents.

The first step for the State was to plant in the minds of the jurors the notion that businessmen do at times fail to conduct themselves in the best interest of the public. Proceeding along this line, the State made much of the well known maxim of Adam Smith:

¹⁷Trial Transcript, I, p. 41.

People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public or in some contrivance to raise prices.¹⁸

Having laid this foundation, the next step was to establish that Oklahoma asphalt suppliers were members of a market structure particularly susceptible to such conspiracies and contrivances. Here the State merely established that the sale of liquid asphalt to the Oklahoma Highway Department would fall into the category of oligopoly. That being done, there was no shortage of statements by well-known economists to the effect that oligopoly invites collusion. Thus the jury was bombarded with such statements from numerous sources--even one from a text written by one of the defendants' own expert witnesses. Next it was contended by the State that collusive agreements are easier to enforce closer to home.¹⁹

Once the jury had been properly informed that (a) when businessmen get together, even for a friendly game of golf, it frequently results in a conspiracy to fix prices; (b) Oklahoma asphalt suppliers are oligopolists, and oligopolists are the worst group about conspiring; and (3) conspiracies close to home (within the State boundaries?) are the easiest to enforce, the next step was to prove that the parties had indeed met together--before each contract letting, in fact. The meetings of the Asphalt Refiners Association in its Oklahoma City

¹⁸Trial Transcript, XLIC, p. 4788. The source of the quote is, of course, Smith's Wealth of Nations, ed. Edwin Cannan (New York, 1937), Book I, Chapter X, Part II.

¹⁹Trial Transcript, XLIII, p. 4614.

headquarters have already been mentioned. One particular meeting however--held at the Trade Winds Motel in Tulsa in February, 1962--was given special attention. Present at this meeting were representatives of each of the respondents. In most cases the representative was in charge of asphalt sales for his company. The State presented one witness, who had been present at the meeting, whose testimony hinted that an upcoming State contract letting was discussed at the meeting. The witness intimated that he had overheard some incriminating conversation at the time. According to this witness, he had heard one of the defendants state that:

We have a nice little closed deal going down there [Oklahoma], and we get good prices. And we have the same thing up in Montana and roughly, the same thing up in Utah.²⁰

²⁰Trial Transcript, XXIV, p. 2490. The witness was asphalt sales manager for Union Asphalt and Road Oils, Inc. at the time of the 1962 meeting. The actual importance of this particular witness in the case is extremely difficult to assess or explain. Apparently his role was primarily to plant suspicion in the minds of the jurors concerning the propriety of the defendants' actions. This was done largely through innuendo. He did not present direct testimony and evidence that the defendants actually rigged prices at the Trade Winds meeting. The reason that he played this limited role seems to have been that the man was not unimpeachable, and the State was most hesitant to rely heavily on his testimony. Actually, several persons who were knowledgeable of the case intimated to this writer that the witness was not the strong, unimpeachable witness that the State would have liked to have had giving direct testimony of a conspiratorial meeting. (None of these persons consented to be quoted and identified. Nor were all the reasons for the witness's vulnerability spelled out.) The fact that the State placed major emphasis on proving the conspiracy by economic argument and relied very little on the testimony of this witness adds credibility to the suggestion that the witness's testimony and/or character was not indisputable.

Concluding Remarks on the State's Case

The State's case follows rather well the second approach mentioned by A. D. Neale. The State started with the absence of price competition and sought to show that that state of affairs could not have been maintained without collusion. Further, the State did use (as Neale suggested it should be) the uniformity of prices among ostensible competitors as only a starting point. It proceeded to establish a whole pattern of performance which it alleged could result only from collusive conduct. The higher level of bids to the State of Oklahoma, the geographically segmented market, the absence of cross-bidding between Kansas and Oklahoma state lines, the competitiveness of bids to the northern states--all these were described as pieces of a collusive puzzle. The piece holding the puzzle together was the Asphalt Refiners Association, the alleged mechanism for implementing the illegal conspiracy.

Obviously the treatment of the State's case is only an outline of the actual case. It would be impossible to record every fact, every exhibit, every argument of a case which generated some 5000 pages of trial transcript. The effort has been to present a fair representation of the State's case; to present enough of the State's arguments and evidence to acquaint the reader with the direction and main thrust of the State's case.

Nonconspiratorial Explanation of Respondents' Pricing and Sales Policies

Having examined the State's case contending that the behavior of the respondents could logically be explained only in the context of an

illegal conspiratorial agreement, the next step is to ask whether an alternative explanation is possible. The approach is to attempt to rebut the State's explanation and to offer a logical, nonconspiratorial explanation of the respondents' behavior. Since the rebuttals of certain of the State's charges are inseparably related (eg., identical bids and a geographically segmented market both result from one factor, that being the respondent's pricing policy), the format here is to deal with each allegation as it logically arises. Thus the rebuttals do not necessarily follow the same sequence as in the above section.

Allegations I and II Revisited

The State's development of its first two allegations logically falls into two major parts. First is the trade association--the alleged vehicle of the conspiracy. Next is the alleged noncompetitive characteristics exhibited by the respondents' market performance. Identical bids and price changes, the geographically segmented market, and the high level of in-state relative to out-of-state bids were all viewed by the State as supportive of its allegation of noncompetitive pricing to the Oklahoma Highway Department.

1. Asphalt Refiners Association. First it must be recalled that the law does not forbid competitors to meet together. There is nothing illegal per se about a trade association. This point was made in Chapter II at which time it was noted that a trade association may legally carry out certain functions.²¹ On the other hand, competitors may not "agree upon the prices at which they collectively will buy, or

²¹See page 15 of this paper.

sell, the territory in which they will do business, or the persons with whom each will deal.²²

Thus in the absence of proof that the meetings of the Asphalt Refiners Association were for the purposes of discussing forbidden rather than legal topics, the State's contentions concerning that group could be considered as no more than an attempt to plant seeds of suspicion in the minds of the jurors.

2. Noncompetitive characteristics of bids to Oklahoma Highway Department. Is it possible that the identity of bids to the State, their relatively high level, and other apparent noncompetitive behavioral patterns can be logically explained in the absence of a conspiracy? The defense answered that question affirmatively. First it should be pointed out that these were hardly "secret, sealed bids" which asphalt suppliers submitted. Instead, the companies followed the practice of simply quoting their dock prices to the State Highway Department. That dock price was known to all producers in the industry--being listed in leading trade publications such as Oil Daily and Platt's Oilgram. Thus the State's claim that the suppliers "submitted literally hundreds of secret, sealed bids on asphalt to the State of Oklahoma, which were identical to the fourth decimal point" loses much of its bite. It might also be noted that "identical to the fourth decimal point" sounds much more sinister than was the actual quoting procedure. Since the published price of asphalt is expressed as dollars per gallon, the fourth decimal point turns out to be merely the per gallon price to the

²²Van Cise, p. 33. Once again, see Van Cise for citations of the cases from which each of these decisions is taken.

quarter of a cent; eg., 0.1025 is simply ten and a quarter cents per gallon.

The question of why the suppliers would make a practice of quoting dock price was addressed in Chapter III but deserves a brief review here. First it will be recalled that the State did not specify quantities to be purchased or time of delivery on its contracts. It only agreed to purchase "quantities needed and designated." Recall also that prices quoted by the supplier took the form of price guarantees on the unknown quantities. Prices were quoted f.o.b. refinery and transportation costs are significant. There was no possibility of secret price concessions on a State contract because of the State practice of notifying all bidders of the winning bid and bidder. Under these circumstances, it would seem illogical for the suppliers to adopt any other pricing policy toward the State. Thus the identity of bids and the rigid adherence to the dock prices should be expected to obtain under the State's purchase procedure, conspiracy or no conspiracy. The occasional departures from that rule may be viewed as feelers by particular companies to see if other companies would follow. The January 15, 1957 price hike by Kerr-McGee and the subsequent response by other suppliers could be cited as an example.

And what about the geographically segmented market? Once again, the answer to that should be clear from Chapter III. It was the direct result of the suppliers' adherence to dock prices. Each supplier had a geographic area in which he had a freight favored status. And why would a supplier not expand his market by freight absorption? Why sell out-of-state at a low net back when the supplier could absorb a few cents freight and capture the entire market as the State suggested?

That too should be obvious from the analysis in Chapter III, but the issue deserves some amplification here. It will be recalled that the State contended that Riffe could have captured the entire Oklahoma Highway Department market with an 8.49 cent bid from Ardmore. This bid would have yielded a considerably higher net back than Riffe received on most out-of-state sales. With regard to that contention, Mr. Ray Felts of Riffe echoed, in his own words, what was explained in Chapter III above. First he indicated that such a policy would involve "lowering the price in a place where we were already low."²³ (It will be recalled that geographic price discrimination within this market is impossible.) Next Felts noted that if they were to "lower our price 1.5 cents to match someone, they merely lower five points and stay in there."²⁴ Other asphalt sales executives offered similar conclusions. And when asked if he could capture the entire State of Oklahoma market for six months with a price reduction, L. E. Riffe replied, "No. The State had the right to change it within twenty-four hours and ask for bids from all my competitors that would equal or be less than mine."²⁵ Thus, given the State's bidding procedure, one must admit that no supplier has an overwhelming incentive to quote less than his dock price to the Oklahoma Highway Department. Actually it seems ironic that a system which the State devised apparently in hopes of obtaining lower prices may have had the opposite effect.

²³Trial Transcript, XXXIII, p. 3605.

²⁴Ibid.

²⁵Ibid., XXXV, p. 3740.

And finally, what about the level of in-state relative to out-of-state bids? As was explained in the section concerning Intermarket Sales Policies, one would logically expect asphalt suppliers naturally to precipitate toward discriminatory pricing. Given the different elasticities of demand in the various markets, price discrimination seems the only logical course of action for the respondents. Thus the lower elasticity coefficient of the Oklahoma Highway Department provides the best explanation of the relatively higher prices charged in that market.

Along the same line, it might also be recalled that Oklahoma asphalt suppliers face a much more competitive situation in the case of the out-of-state market. Oklahoma suppliers, being from a surplus asphalt producing state, must compete with other surplus-state suppliers for the markets in deficit states. More is made of this point below in discussing the State's third allegation.

The defense raised two additional arguments to help explain the discrepancy between in-state and out-of-state prices. First, sales to the Oklahoma Highway Department always involved hot asphalt. Asphalt sent to the northern states was usually sent by tank car and not hot. Thus the lower price charged the northern states could be due partially to the fact that cold asphalt is worth less than hot asphalt.²⁶ A second question deals with the appropriate price to use. The State argued that the net back price was the appropriate price to use in analyzing price differentials between the markets. The defense, on the

²⁶The defense did not fully develop and utilize this argument, however. They did not give data concerning heating costs and attempt to make price adjustments to allow for this factor.

other hand, argued that the delivered price was the relevant one. Obviously the State would choose the price which maximizes the differential and the defense would desire to minimize it. While a full discussion of this issue is beyond the realm of this study, the following observations are offered. Market performance cannot be assessed solely on the basis of delivered price. Looking only at delivered price could lead to the conclusion that a basing point system such as "Pittsburgh-Plus" was the epitome of competitive pricing. On the other hand, neither does it seem proper to totally ignore legitimate transportation costs. But the question of which price is the legitimate one is relevant only to the size of--not the existence of--a price differential. And the defendants never denied the existence of price discrimination. Oklahoma asphalt producers face considerably more competition in the northern markets than in Oklahoma. Being nearer the competitive end of the spectrum, price in the northern market is closer to being a given so far as Oklahoma suppliers are concerned. They are in no position to administer prices in those markets; they must meet the competition. Having no control over the transport costs, they must lower the refinery price.

Allegation III Answered

The State's contention that Kansas and Oklahoma asphalt suppliers had an agreement not to bid into each others' state was built rather straightforwardly on (1) the lack of such bidding between the two states, and (2) bids by suppliers from both states to other, more distant markets.

Here too, it hardly seems farfetched to argue that such a practice could evolve in the absence of a collusive agreement. Both Kansas and Oklahoma are surplus asphalt producing states. Suppliers in each state knew that they must dispose of large quantities of asphalt out-of-state. The only question was where. Not surprisingly, both Kansas and Oklahoma suppliers turned to deficit states as markets for their surplus; thus the bids into states such as Nebraska, Missouri, Wisconsin, and the other northern states. It is true that Kansas and Oklahoma suppliers could have bid into each others' states, but such hardly seems in keeping with their own best interests. Because of transportation costs Oklahoma suppliers have a competitive advantage in Oklahoma. The same holds for Kansas suppliers in Kansas. It is undoubtedly true that Apco, Skelly, and/or Mobil could have lowered their prices and made some successful bids into Oklahoma. But Oklahoma firms would have retaliated and the net result would have likely been little or no increase in sales, but everyone would be receiving lower prices on all asphalt sold. So why risk a price war when the firms could compete on fairly even terms in the northern states?

Here is where freight rates come into the picture. Interstate freight rates are so constructed as to put Kansas and Oklahoma suppliers on roughly equal terms in the northern markets. Consider, for example, the case of shipments of suppliers from Kansas and Oklahoma to Omaha.²⁷ The rate from the Oklahoma area is 3.79, or three and seventy-nine hundredths cents per gallon to Omaha. This is a common rate for all

²⁷This example is taken from the testimony of Richard H. Leftwich, Standard Industries, Inc., and Metropolitan Paving Co., Inc. v. Skelly Oil Co., et al., Trial Transcript, XXIV, pp. 4596-4597.

Oklahoma suppliers. From El Dorado, the common point in Kansas, the rate is 3.62. Thus the asphalt would arrive at the dispersal rail point at only 17/100ths of a cent difference in costs. This would allow Oklahoma firms to be quite competitive with Kansas firms in the northern markets.

Another point which must be discussed relative to the State's third allegation deals with between-state bids coming after the date of the filing of the suit. The State argued that while there was no between-state bidding during the alleged conspiracy era, after October 4, 1965, Kansas refineries began to sell into Oklahoma. This, the State contended, clearly demonstrated that only an illegal market allocating agreement could have prevented such a practice in the past. What the State failed to mention was that it had made several changes in its bidding procedure. As was mentioned above, the State had always required bidders to have testing laboratories and to meet other requirements before it would accept bids. For example, Inland submitted a bid from a new refinery in March, 1962. It was not until November that Inland was finally notified of acceptance.²⁸ This State practice tended to exclude, or at least discourage, out-of-state bidders. In fact, the State did not invite out-of-state suppliers to bid until after the filing of the suit. But after the filing of the suit the State sent out bid invitations to twenty-two out-of-state suppliers. At the same time (March 28, 1966) the State dropped its prior inspection requirement.²⁹ Additionally, the State revamped its bidding procedure

²⁸Trial Transcript, I, p. 91.

²⁹Ibid., pp. 113-117.

in several other respects after October, 1965. On October 14, 1965, the provision awarding a contract to all qualified bidders was dropped. At the same time bids were put on a per ton basis, and if a bidder was unable to make delivery, the State would go to the next highest bidder. In April, 1966, the State started taking spot bids. Suppliers were asked as often as one or more times a week to bid on a specified amount for each particular job. Thus the State's pointing to bids made after the filing of the suit as support for its third allegation hardly seems legitimate.

It further seems that if the absence of between-state bids was cited as evidence of illegality, the suppliers would almost automatically begin to submit such bids once they learned of the charges. One might even expect a natural human tendency to overreact in such a situation. For example, there is some evidence of a similar overreaction on the part of electrical equipment producers in the now-famous electrical conspiracy of the early 1960's. Soon after successful prosecution seemed assured, prices of some electrical products were reduced drastically. But they did not remain at that low level--they subsequently rose to an intermediate level. There is some reason to believe that at least part of the explanation for the huge initial price drop lies in this overreaction factor.³⁰ Thus it seems justifiable to discount the value of the State's arguments concerning the respondents' behavioral changes immediately following the filing of charges.

³⁰Ronald H. Wolf reports that some prices dropped as much as 30, 40, and even 50 per cent. See his "Identical Pricing and TVA: Toward More Effective Competition," The Economic Impact of TVA, ed. John R. Moore (Knoxville, 1967), p. 93.

Re: Allegation IV

If the State's proof of its first three allegations logically substantiated its fourth allegation, then the successful rebuttal of those same allegations must rebut the State's monopolization charge. Thus what the State called a conspiracy "to monopolize the sale of asphalt within and to the State of Oklahoma" could be dismissed as being instead informed, independent action on the part of liquid asphalt suppliers.

Consideration of Hypotheses

Before attempting to pass judgment on the validity of the two hypotheses, a few words of caution appear in order. First, in tentatively confirming or rejecting any hypothesis, one does "pass judgment." It is important to recognize that in drawing conclusions regarding the testing of any hypothesis, value judgment is involved. Friedman's well-known caution is worth repeating. "Factual evidence can never 'prove' a hypothesis; it can only fail to disprove it, which is what is generally meant when we say, somewhat inexactly, that the hypothesis has been 'confirmed' by experience."³¹

One other statement of Friedman's seems quite apropos. "Unfortunately, we can seldom test particular predictions in the social sciences by experiments explicitly designed to eliminate what are judged to be the most important disturbing influences. Generally, we

³¹Milton Friedman, "The Methodology of Positive Economics," Essays in Positive Economics (Chicago, 1953), p. 9.

must rely on evidence cast up by the 'experiments' that happen to occur No experiment can be completely controlled"³²

Keeping in mind these limitations, consider the two hypotheses.

Hypothesis I

Restatement of Hypothesis: Because of some special market conditions peculiar to the liquid asphalt industry, firms in that industry are particularly susceptible to antitrust involvement.

One of the major conclusions resulting from the foregoing analysis has to be that the same pricing and sales policies should be expected from Oklahoma asphalt suppliers whether their conduct was collusive or noncollusive. Market conditions are such that the same performance could result from two widely divergent conduct alternatives. If this conclusion is accurate, a major step has been taken toward confirming Hypothesis I. It will be recalled that the identity of bids submitted by asphalt suppliers seems to have been a prime factor behind the State's decision to file charges. Indeed, there is substantial evidence to suggest that identical bidding is widely considered as prima facie evidence of conspiracy. The pervasiveness of that view was evidenced by former President Kennedy's issuance of Executive Order 10936. That order requires all government departments to report to the Attorney General any instances of identical bids on government purchases or sales which exceed \$10,000. (The figure of \$10,000 may be raised or lowered at the discretion of the Attorney General.) Some of the wording of that order is particularly interesting.

³²Ibid., p. 10.

Whereas it is in the interest of the United States to obtain truly competitive bids in connection with its procurement and sale of property and services pursuant to public invitations for bids and the prevalence of identical bidding is harmful to the effective functioning of a system of competitive bids;

Whereas identical bidding may constitute evidence of the existence of conspiracies to monopolize or restrain trade or commerce; and

Whereas the collection and dissemination of information with regard to identical bids submitted to the Federal government will discourage future submissions of such bids, aid in the enforcement of the antitrust laws and the maintenance of a competitive economy and serve to reduce the costs of the Government

. . . The principal purpose of this order is to make more effective the enforcement of the antitrust laws by insuring that the Attorney General has at his disposal all information which may tend to establish the presence of a conspiracy in restraint of trade and which may warrant further investigation with a view to preferring civil or criminal charges.³³

Earl W. Kintner reports that there is a growing tendency for state and local authorities to file with the Department of Justice or the Federal Trade Commission, or both, information on identical bids on public purchases or contracts. This trend, he predicts, will become increasingly widespread.³⁴ Even some academic economists are apparently willing to equate identical bidding and conspiracy. It seems clear that Professor Vernon Mund would be willing to initiate proceedings in any case involving identical bidding. He recommends that "the legal doctrine that identical bidding is consistent with effective competition

³³Executive Order 10936, issued April 24, 1961, seems to have been a direct consequence of the great electrical conspiracy. Wolf apparently finds this issue very intriguing. He carefully traces the link between the TVA's disclosure of identical bidding, the detection of the electrical conspiracy, and the resulting impact on public policy.

³⁴Earl W. Kintner, An Antitrust Primer (New York, 1964), p. 37.

should be replaced with a working rule making identical bidding a presumption of illegal conduct lessening competition and restraining trade."³⁵

In light of such evidence, it appears that firms in any industry which is characterized by a history of identical bidding on public contracts will sooner or later find themselves facing antitrust litigation. This seems especially true when the identical bidding occurs in an industry which also exhibits other traits which might lend support to an initial suspicion raised by the identical bidding. Good examples of such traits might be the existence of intermarket price differentials, and/or the absence of cross-bidding between suppliers in two different markets (such as Oklahoma suppliers not bidding into Kansas, and Kansas suppliers not bidding into Oklahoma). Add to all this the successful prosecution of firms in the same industry in a neighboring state and a trip to the court on conspiracy charges is practically assured. Thus it must be concluded that the first hypothesis is confirmed--or rather that it was not disproved.

Hypothesis II

Restatement of Hypothesis: Because of these same market conditions, an asphalt supplier may well be found guilty of an antitrust violation when in fact the firm's conduct conforms to that which could be expected of an independently-acting, profit-maximizing firm.

³⁵Vernon A. Mund, "Identical Bid Prices," Journal of Political Economy, LXVIII (April, 1960), pp. 168-169.

On the basis of economic analysis of the industry, some inferences may be offered as to the characteristics which should be expected in the market performance of Oklahoma liquid asphalt suppliers. To be expected are:

- 1) The submission of identical price quotations to the State of Oklahoma;
- 2) The presence of price discrimination between various markets on the basis of differing elasticities of demand; and
- 3) The marketing of surplus asphalt into deficit, rather than into other surplus asphalt producing states.

One should expect to find these factors, conspiracy or no conspiracy. It must then be concluded that from an examination of the economic performance exhibited by Oklahoma liquid asphalt suppliers, there is no sound basis in economic theory for inferring that it resulted from one mode of conduct rather than from another. By simply looking at the performance of Oklahoma asphalt suppliers, it is impossible to make a strong economic case that the contributing market conduct was either conspiratorial or nonconspiratorial.

At this point it must be explained that the legal requirements for conviction differ between criminal and civil cases. Under the law, in criminal cases the state must prove guilt beyond any reasonable doubt. In civil actions, a case must be substantiated by a preponderance of evidence. This is a significant difference. In criminal proceedings, as Lewis Mayers explains,

The rule is simply that the defendant is not to be convicted merely because the evidence against him outweighs that in his favor; the evidence of guilt

must so far outweigh the evidence of his innocence that no reasonable doubt of his guilt remains.³⁶

But in civil cases (such as the one presently under consideration), a preponderance of the evidence will suffice. This simply means that one side must have the "greater weight of evidence."³⁷ Thus one party must simply tip the balance of evidence in his favor.

Where does this leave us relative to Hypothesis II? Recall first that the case, entitled State of Oklahoma v. Allied Materials Corporation, et al., was tried before a jury composed of citizens (and taxpayers) of the State of Oklahoma. It was a case in which a mere preponderance of the evidence was sufficient for finding for either side. Next consider the economic evidence presented in the trial. As has been shown, a sound economic case can be made for either a conspiratorial or a nonconspiratorial explanation of the conduct of the defendants. Which explanation is a jury most likely to accept?

There is a deep-seated suspicion in America that conspiracy is everywhere afoot. Television programs are awful because 'they' want them that way. Stocks go up or down because 'insiders' are rigging the market. Rents are high because the landlords are ganging up on the rest of us. The Yankees always won because that's how 'they' wanted it; now 'they' don't want it that way any more, so the Yankees lose. The Establishment thinks the campus disruptions are manipulated by a few hardcore conspirators (two SDS members, a Black Panther, a Soviet attache, and a professor); and militants think the military-industrial complex (in the person of a general, two corporation presidents, a United States Senator, and a professor) is plotting behind closed doors to manipulate everybody else. We've all seen too many Westerns. So why should interest rates be any different?³⁸

³⁶Lewis Mayers, The American Legal System (New York, 1955), p. 110.

³⁷Henry C. Black, Black's Law Dictionary (St. Paul, 1968), p. 1344.

³⁸Lawrence S. Ritter and William L. Silber, Money (New York, 1970), pp. 93-94.

If one takes Ritter and Silber's rather humorous observation and substitutes the words "liquid asphalt prices" for "interest rates" in the last sentence, he is confronted with a serious and important question. While the Ritter-Silber quotation does not prove that a jury will always accept a conspiratorial explanation, it may point to a problem faced by the defense. Economic theory alone does not seem to provide a clear and self-evident answer as to the conduct of the defendants. It is also possible that a jury might be composed of twelve ordinary men and women who do not happen to be especially knowledgeable of sophisticated economic theories. If the jury is then unable to infer conduct on the basis of pure economic theory, upon what might it base its decision? If the jury knows that the defendants made a practice of meeting together just prior to each bid letting, might not that fact be weighed heavily? It might also be very damaging to the defendants if the State could present a witness--any type witness would do--to suggest that the defendants were less than honorable men; that they even met together in a motel on occasion. Add to that the fact that even the Father of Economics has said that "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public or in some contrivance to raise prices," and a conspiratorial explanation might be very appealing.

The judgment handed down by the jury against the defendants in State of Oklahoma v. Allied Materials Corporation, et al. suggests that a firm may be convicted on an antitrust violation even when a strong economic case can be made that its conduct is consistent with that which

could be expected of an independently-acting, profit-maximizing firm.
It also seems to confirm Hypothesis II.

CHAPTER V

POLICY IMPLICATIONS

National Policy Considerations

The significance of the case, State of Oklahoma v. Allied Materials Corporation, et al., extends far beyond the confines of its effect on the parties involved. At the heart of the case lies an extremely important question. It is a question which has arisen in antitrust cases before, but is one which is as yet unresolved. That question is: To what degree should the courts regard parallel action as proof of illegal collusion without explicit proof of the coordinating mechanism? The way in which this issue is ultimately resolved may have a significant impact on antitrust policy, and possibly even on the structure of American industry. The implication of answering that question in one way--and the courts have on occasion approached that way--is an outlawing of those types of oligopolistic structures which seem particularly prone to parallel behavior. Thus the question requires careful consideration.

Recalling a statement cited in Chapter I by A. D. Neale, one method of legally proving a conspiracy is to start with the absence of price competition and to show that this state of affairs could not be maintained without collusion. This involves, of course, the process of inferring conduct from structure and performance. But what types

of evidence, and how much evidence, are necessary to convince a court that the absence of price competition can only be due to conspiracy? Professors George C. Thompson and Gerald P. Brady express the problem faced by the courts in attempting to determine the presence of concerted action with the following statement:

The task of a government prosecutor would be comparatively simple if every case involved a written agreement between competitors, recorded in a public place. The issue of whether a particular form of concerted action is lawful could then be placed before the court in a clearcut manner.

One of the principal problems, however, is to prove concerted behavior in the first place. Before the court can decide whether the combination is acting illegally, it must decide what sort of evidence will prove that competitors are acting in concert.¹

A review of court rulings in cases involving alleged concerted action reveals that the courts have not as yet reached such a decision. They have not applied a consistent standard in such cases.

As Professor Carl Kaysen has noted, antitrust proceedings for collusive price fixing are central in the history of Sherman Act enforcement. But in what Kaysen calls the classic examples of such cases, "the finding of collusion rested on ample evidence of elaborate machinery for maintaining communication among the members of the several conspiracies." Among these classic examples might be listed the Addyston Pipe Case, the American Column and Lumber Case, the

¹George C. Thompson and Gerald P. Brady, Antitrust Fundamentals (Belmont, California, 1964), p. 57.

Trenton Potteries Case, and the Madison Oil Case.² But Kaysen notes that somewhere along the line the courts started to find collusion on a different kind of evidence. As he points out, in the second Tobacco case and the two basing point cases, the operation of an illegal conspiracy was an important part of the offense charged against the defendants. "Yet proof of the existence of elaborate machinery of communication among the defendants was notably absent from the government arguments in the trials. Instead there was emphasis on the existence of a 'planned common course of action' in the words of the Federal Trade Commission, or the existence of 'mutual understanding or agreement' in those of the majority of the court."³

Apparently no one is quite sure what does constitute sufficient evidence for the court to find conspiracy on the basis of market structure and performance--not even the courts themselves. As Professor Neale has noted, mere uniformity of prices among ostensible competitors does not in and of itself prove conspiracy. It is only a starting point.⁴ The Supreme Court clearly stated as much in 1927 in the International Harvester Case. In the words of the Court:

²Carl Kaysen, "Collusion under the Sherman Act," Quarterly Journal of Economics, No. 65 (1960). The cases listed refer to, respectively, Addyston Pipe and Steel Co. v. United States, 175 U.S. 211 (1899); American Column and Lumber Co. v. United States, 257 U.S. 377 (1921); United States v. Trenton Potteries Co., 273 U.S. 392 (1927); and United States v. Socony-Vacuum Oil Co., 310 U.S. 150 (1940).

³Ibid. The cases referred to here are American Tobacco Co., et al., v. United States, 328 U.S. 781 (1946); Federal Trade Commission v. Cement Institute, et al., 333 U.S. 683 (1948); and Triangle Conduit and Cable, Inc. v. Federal Trade Commission, 168 Fed. 2d 175 (1948).

⁴Neale, p. 49.

The fact that competitors may see proper, in the exercise of their own judgment to follow the prices of another manufacturer, does not establish any suppression of competition or show any sinister domination.⁵

Undoubtedly Kaysen would agree with Neale and the Court in the International Harvester Case in the normative sense. His concern is that the courts may have backed away from this 1927 position, and on occasion considered Neale's "starting point" to be also the finish line. Consider the second American Tobacco Case. In this case the Supreme Court seemingly broadened the ground for finding violation of the Sherman Act. In the case the Court ruled that a conspiracy to monopolize could be inferred from a pattern of action or behavior over time and that a formal agreement to a conspiracy was not necessary. In the words of Mr. Justice Burton:

It is not the form of the combination or the particular means used but the result to be achieved that the statute condemns. It is not of importance whether the means used to accomplish the unlawful objective are in themselves lawful or unlawful. Acts done to give effect to the conspiracy may be in themselves wholly innocent acts. Yet, if they are part of the sum of the acts which are relied upon to effectuate the conspiracy which the statute forbids, they come within its prohibition. No formal agreement is necessary to constitute an unlawful conspiracy Where the circumstances are such as to warrant a jury in finding that the conspirators had a unity of purpose or a common design or understanding, or a meeting of minds in an unlawful arrangement, the conclusion that a conspiracy is established is justified.⁶

What are the implications of this decision? Does the case reverse the earlier International Harvester decision? Does it outlaw conscious parallelism? Numerous economists and lawyers have addressed themselves

⁵United States v. International Harvester, 276 U.S. 693, (1927), pp. 708-709.

⁶American Tobacco Company v. United States, 328 U.S. 781, (1946).

to these questions. In a classic article dealing with this particular case, William H. Nicholls argues that the case "brought wholly tacit, nonaggressive oligopoly fully within the reach of the conspiracy provisions of the Sherman Act." Nicholls points out, while

there was plentiful and undisputed evidence that the three defendant dominant firms had behaved identically with regard to prices, terms of sale, and general business practices, . . . the case was probably unique in that there was not a whit of evidence that a common plan had ever been contemplated or proposed. The government's evidence was admittedly wholly circumstantial.⁷

In the case, each firm was alleged to have acted similarly with the knowledge that the others would so act, to their mutual self-interest.

Again, in Nicholls' words, the Court

accepted the practical implications of the assumption . . . that a few dominant firms will, perhaps independently and purely as a matter of self-interest, evolve nonaggressive patterns of behavior.⁸

Since the Court did find conspiracy in this case, the decision might be interpreted as outlawing conscious parallelism. For as Nicholls approvingly admits, the breadth of this case is so farreaching that, "if it were generally followed, the behavior of few oligopolies could probably escape condemnation as 'conspiratorial'."⁹

Professor E. V. Rostow of the Yale Law School seems to be in complete agreement with Nicholls. As he sees the decision, it means that

parallel action based on acknowledged self-interest within a defined market structure is sufficient

⁷William H. Nicholls, "The Tobacco Case of 1946," American Economic Review, XXXIX, p. 285.

⁸Ibid.

⁹Ibid., p. 286.

evidence of illegal action under Section 1 of the Sherman Act.¹⁰

Professor Almarin Phillips strongly disagrees with Nicholls and Rostow in his assessment of the case. He argues that while, when read in vacuo, the case might appear to outlaw parallelism per se, such is far from true.¹¹ His contention is that there was such overwhelming evidence to the effect that the parallelism could only be a joint effort to injure or destroy smaller competitors, that the decision did not outlaw oligopoly. In his words, the case stopped "far from condemning the informal, tacit organization of oligopoly because of its influence on prices and the price structure."¹²

Regardless of which view of the American Tobacco decision is correct, the courts moved even further in the direction of seeing as synonymous parallelism and conspiracy in two subsequent cases. In the 1948 Cement Institute case, the Court found evidence that each of the members of the industry had adhered to a delivered pricing system knowing that all others would do the same sufficient to establish conspiracy.

It is enough to warrant a finding of combination within the meaning of the Sherman Act if there is evidence that persons, with knowledge that concerted action was contemplated and invited, give adherence and then participate in a scheme.¹³

A lower court carried this line of reasoning even further in the Rigid Steel Conduit case of the same year. In this case, one of the charges against the defendants was that they had adhered to a delivered pricing

¹⁰E. V. Rostow, "The New Sherman Act, an Instrument of Progress," University of Chicago Law Review, XIV, No. 4, (1947), pp. 567-600.

¹¹Phillips, pp. 55-56.

¹²Ibid., p. 56.

¹³Federal Trade Commission v. Cement Institute, 333 U.S. 683, p. 716.

system in the knowledge that the others were doing likewise. No mention of any agreement was made. The lower court found the defendants guilty, and the Supreme Court, on a four to four vote, allowed the decision to stand.¹⁴

This reasoning was carried still further in the 1950 case, Milgram v. Loew's. In this case, eight motion picture distributors were sued by a drive-in movie for refusing to supply it with first-run films. A district court found the distributors guilty, and held that their common refusal to supply such films could not have been the result of independent business judgment. This common refusal was held sufficient, in and of itself, to establish a violation of the law. Identity of behavior was all that was required to establish guilt.¹⁵ Such thinking led the Federal Trade Commission to conclude:

When a number of enterprises follow a parallel course of action in the knowledge and contemplation of the fact that all are acting alike, they have, in effect, formed . . . an agreement The obvious fact [is] that the identical prices achieved through conscious parallel action is the same as that of similar prices achieved through overt collusion and, for this reason, the Commission treated the conscious parallelism of action as a violation of the Federal Trade Commission Act.¹⁶

These happy days for the Federal Trade Commission were abruptly ended, however, in the 1954 case, Theatre Enterprises, Inc. v.

¹⁴Triangle Conduit and Cable Company v. Federal Trade Commission, 168 F. 2d. 157.

¹⁵Milgram v. Loew's, Inc., 94 F. Supp. 416.

¹⁶Federal Trade Commission, Notice to the Staff: In Re: Commission Policy Toward Geographic Pricing Practices (October 12, 1948). Cited in Report of the Attorney General's National Committee to Study the Antitrust Laws. May 31, 1955, p. 38.

Paramount Film Distributing Corporation.¹⁷ This case, similar in many respects to Milgram v. Loew's, yielded substantially different results. In it the Court found that the conduct of the defendants, despite its uniformity, could be adequately explained by independent business justification, and added:

But this Court has never held that proof of parallel business behavior conclusively establishes agreement or, phrased differently, that such behavior itself constitutes a Sherman Act offense. Circumstantial evidence of consciously parallel behavior may have made heavy inroads into the traditional attitude toward conspiracy; but 'conscious parallelism' has not yet read conspiracy out of the Sherman Act entirely.¹⁸

Thus the Court ruled that while uniform business behavior is evidence relevant to proof of agreement, it is not sufficient ipso facto to warrant a finding of conspiracy. It is significant that the Attorney General's National Committee to Study the Antitrust Laws declared itself to be in full accord with that Supreme Court reasoning. The Committee stated:

'Conscious parallelism' is not a blanket equivalent of conspiracy. Its probative value in establishing the ultimate fact of conspiracy will vary case by case. Proof of agreement, express or implied, is still indispensable to the establishment of a conspiracy under the antitrust laws.¹⁹

Where does that leave the firm which finds itself in court facing price-fixing charges today? Some observations on that question are offered later in this chapter.

¹⁷Theatre Enterprises, Inc. v. Paramount Film Distributing Corp., 346 U.S. 537 (1954).

¹⁸Ibid., p. 541.

¹⁹Report of the Attorney General's National Committee to Study the Antitrust Laws, p. 39.

What lessons, if any, may be learned from this trek through legal history? It seems to indicate that several questions need to be answered. First, what does Congress wish to outlaw with the national antitrust laws? If the answer is price-fixing, then one is again faced with the problem of deciding what type of evidence is required to prove a price-fixing charge. The practice of giving a different answer to that question almost every time such a case appears in court is hardly satisfactory. Should the antitrust laws then simply strike at uniformity of action? Or perhaps at all instances of identical bidding as Mund seems to favor? But is this uniformity of action (or conscious parallelism) the result of collusion or of rational oligopolistic conduct? Before that question can be answered, however, the terms "collusion" and "rational oligopolistic conduct" must be defined, for as Richard E. Low points out, these terms themselves have quite diverse meanings in economics.²⁰

The failure of Congress and the courts to successfully deal with these questions underscores the unsatisfactory nature of our present conduct-oriented antitrust laws. There may be merit in Low's contention that "those who favor attacks on parallel business conduct might concentrate on curing the disease (if a disease it is) rather than the symptoms" ²¹ Kaysen and Turner advanced such an approach (perhaps a bit extreme) with their proposed structure-oriented antitrust

²⁰Richard E. Low, Modern Economic Organization (Homewood, Illinois, 1970), p. 377n.

²¹Ibid., p. 379.

statutes.²² Whether or not the antitrust laws are revised and redirected, Kaysen and Turner's idea of creating a special Economic Court merits consideration. The following statement by Neale clearly suggests the need for a high degree of expertise in the handling of complicated antitrust proceedings.

To distinguish between informed oligopoly and collusion as the cause of damped-down price competition is the most difficult task that the courts have to face . . . , given that they must give due weight to normal legal safeguards in favour of accused persons and yet avoid being deceived by merely specious arguments. It would not be claimed that they never make a mistake in this task. Indeed, the distinction is not always hard and fast; one can imagine situations in which it would be genuinely difficult even for the businessman himself to say whether he was acting from individual prudence or under the suasion of a common understanding²³

Given the degree of difficulty involved and the importance of the outcome, it would seem that to ask a jury to digest sophisticated economic theories during the short course of a trial and to use them skillfully to reach a verdict in complicated antitrust proceedings is perhaps asking too much.

Implications for the Litigants

Having discussed some of the national policy implications of the case, attention is now turned to the parties directly involved in the case. It would seem that both the State and the defendants could benefit from a careful study of the case. There are some rather obvious lessons for each. Consider first the State. On the one hand the State

²²Carl Kaysen and Donald F. Turner, Antitrust Policy: An Economic and Legal Analysis (Cambridge, 1965), Ch. 8.

²³Neale, p. 51.

sought competitive bids on their liquid asphalt purchases, presumably in hopes of obtaining the product at the lowest possible price. But at the same time the State adopted policies which would tend to minimize its chances of attaining its goal. As has been shown, the State's buying procedure practically guaranteed uniform price quotations from suppliers as well as a geographically segmented market. It discouraged competitors from risking a price war by lowering their bids. And finally, to add insult to injury, the State even made sure that if there existed a collusive agreement, it could be easily policed by the conspirators. The State's practice of notifying all bidders of the winning bid and bidder would have discouraged any cheating on an illegal agreement if one existed.

The case makes obvious the need for correcting some of the weaknesses of the bidding procedure used by the State prior to the initiation of the suit. It is clear that in order to obtain the lowest possible bid, the State must inform all perspective bidders of certain pertinent information. The bidder should know the quantities to be purchased and the time and place of delivery. This would help to give the supplier an incentive to compete more vigorously. The State might also give some consideration to the idea of lagging the time between the opening of bids and sending out notification of the contract award to unsuccessful bidders.

The fact that the State made several changes in its bidding procedure after October, 1965, would seem to indicate that the State learned at least something from its experience. And what of the defendants?

Whether Oklahoma asphalt suppliers were indeed engaged in an illegal conspiracy or not, it is undeniable that they were less than politic in their behavior. While one may point to the imperfections of present antitrust laws and judicial proceedings, the fact remains that everyone must "play by the rules as they are written." If firms are going to perform in a manner which might raise questions, they must be prepared to answer those questions. And it should have been clear to the respondents that the continued submitting of identical bids, the continuous price discrimination against the State, and other facets of their performance (regardless of how well justified in their own eyes) would ultimately raise the ire of the State.

Oklahoma asphalt suppliers would have done well to have familiarized themselves with antitrust law and enforcement practices at the time of the formation of the Asphalt Refiners Association. At the very least, a knowledge of the implications of Executive Order 10936 and a reading of the following passages might have given the respondents a hint as to their fate. The first quote is taken from Jerrold G. Van Cise, formerly chairman of the Section on Antitrust Law of the New York State Bar Association and chairman of the Section on Antitrust Law of the American Bar Association. He was also a member of the Attorney General's National Committee to Study the Antitrust Laws.

. . . an unnatural uniformity of action between competitors
. . . may be viewed by the courts as evidencing an unlawful arrangement as clearly as any written agreement. Again, the records of a telephone company listing calls between private homes of competitors immediately prior to a price increase, if unexplained, may be embarrassing. Uniformity of action and unusual telephone calls [or motel meetings?] do not, of course, prove the existence of a conspiracy, but

such conduct blazes a trail that may be readily followed by the imaginative prosecutor to determine whether or not a conspiracy ever existed.²⁴

The second quote, taken from A. D. Neale once again, provides a further clue of what might be expected in court.

Many people in industry in the United States would hold that the courts are at times too readily persuaded of collusion and that they give too little weight to the good reasons which prudent and well-informed businessmen often have--independent of any agreement--for not upsetting the going price. It may perhaps be that the courts are not always so rigorous in their handling of circumstantial evidence in price-fixing cases as they would be in matters of major crime. It is a very human tendency in law to make the evidence fit the crime no less than the punishment; evidence good enough to secure a conviction for a minor motoring offense would often be found wanting in a murder trial.²⁵

As a final observation, the firm which has any reason to believe that its performance might raise even the slightest suspicion of an antitrust violation would be well advised to be influenced by two factors. First, the firm should remember that while the legal requirement for a conviction in a criminal case is proof beyond a reasonable doubt, a civil case is decided on a preponderance of the evidence. This means that the legal requirement for securing a conviction in a case such as State of Oklahoma v. Allied Materials Corporation, et al., is less than in a criminal case. Second, the firm should assume that Ritter and Silber's previously cited maxim (that there is a conspiratorial explanation for everything) is accurate and conduct itself accordingly.

²⁴Van Cise, p. 33.

²⁵Neale, p. 51.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this dissertation has been to examine certain legal and economic implications of liquid asphalt pricing. Specifically, two hypotheses were tested. The high incidence of antitrust litigation involving the sale of liquid asphalt led to the formulation of the first hypothesis, namely that: Because of some special market conditions peculiar to the liquid asphalt industry, firms in that industry are particularly susceptible to antitrust involvement. It was further hypothesized that: Because of these same market conditions, an asphalt supplier may well be found guilty of an antitrust violation when in fact the firm's conduct conforms to that which could be expected of an independently-acting, profit-maximizing firm.

The case, State of Oklahoma v. Allied Materials Corporation, et al., was used as a model for testing the hypotheses. In order to approach the issue it was necessary first to examine the structure of the market. It was then found that given the nature of the product, the State's bidding procedure, and other structural characteristics of the market, an economist would expect to find virtually identical performance whether conduct was collusive or noncollusive.

Then on the basis of factors determined to have influenced the State's decision to initiate proceedings, it was concluded that Oklahoma asphalt suppliers were especially susceptible to antitrust involvement. The first hypothesis was thus confirmed. Next, upon reviewing the legal requirements for conviction in civil proceedings and considering the difficulty frequently involved in attempting to infer conduct from performance, it was concluded that even though an economist might find the performance of liquid asphalt suppliers consistent with noncollusive conduct, the jury might well hand down a verdict of guilt. It was noted that the problem of distinguishing between informed oligopoly and collusion as a cause of damped-down price competition is one of the most difficult tasks the courts have to face. The second hypothesis was thus confirmed.

Finally, attention was turned to the policy implications of the case. National policy considerations as well as implications for the litigants themselves were discussed. First, the need for the courts to decide to what degree parallel action should be regarded as proof of illegal collusion without explicit proof of the coordinating mechanism was noted. A judicial review of such cases revealed that the courts have not satisfactorily dealt with the issue. Consequently, it was recommended that serious consideration be given the idea of reviewing the present conduct-oriented approach to maintaining competition with an eye toward substituting a structure-oriented approach. It was also suggested that, given the technical nature of such litigation, consideration should be given the idea of establishing a special Economic Court to handle antitrust cases. Last, it was noted that certain features of the State's bidding procedure could be improved, and some conduct

guidelines were suggested for firms in industries having a high degree of susceptibility to antitrust involvement.

As a final note, it must be emphasized that nothing in this paper is intended to reflect unfavorably on either the conduct or outcome of the case around which the study is centered. The responsibility for determining the legality or illegality of the conduct of the defendants and co-conspirators in the case falls within the domain of the court and in no way enters into this dissertation. The conclusions reached in the study are totally independent of the question of the correctness or incorrectness of the jury in the present case.

BIBLIOGRAPHY

Books

- Abraham, Herbert. Vol. III: Asphalt and Allied Substances. 6th Ed. Princeton: D. Van Nostrand Company, Inc., 1962.
- Asphalt Handbook. New York: The Asphalt Institute, 1947.
- Bain, Joe S. Industrial Organization. New York: John Wiley & Sons, Inc., 1959.
- Barnes, Stanley N. and S. Chesterfield Oppenheim, Co-chairmen. Report of the Attorney General's National Committee to Study the Antitrust Laws. Washington, D.C.: U.S. Government Printing Office, March 31, 1955.
- Black, Henry C. Black's Law Dictionary. St. Paul: West Publishing Company, 1968.
- Cassady, Ralph. Price Making and Price Behavior in the Petroleum Industry. New Haven: Yale University Press, 1954.
- Corbett, L. W., et al. Vol. II. "Asphalt." Encyclopedia of Chemical Technology. New York: John Wiley & Sons, 1963.
- Dewey, Donald. Monopoly in Economics and Law. Chicago: Rand McNally & Company, 1959.
- Fellner, William. Competition Among the Few. New York: Augustus M. Kelley, 1965.
- Friedman, Milton. Essays in Positive Economics. Chicago: University of Chicago Press, 1953.
- Greenhut, M. L. Microeconomics and the Space Economy. Chicago: Scott Foresman and Company, 1963.
- Hays, Paul R. Cases and Materials on Civil Procedure. Brooklyn: The Foundation Press Inc., 1947.
- Hibdon, James E. Price and Welfare Theory. New York: McGraw-Hill, 1969.

- Kahn, Alfred E. and Melvin C. deChazeau. Integration and Competition in the Petroleum Industry. New Haven: Yale University Press, 1959.
- Kaysen, Carl and Donald F. Turner. Antitrust Policy: An Economic and Legal Analysis. Cambridge: Harvard University Press, 1965.
- Leftwich, Richard H. The Price System and Resource Allocation. 3rd ed. New York: Holt, Rinehart and Winston, 1966.
- Low, Richard E. Modern Economic Organization. Homewood, Illinois: Richard D. Irwin, Inc., 1970.
- Machlup, Fritz. The Economics of Sellers' Competition: Model Analysis of Sellers' Conduct. Baltimore: The Johns Hopkins Press, 1952.
- Matz, Adolph, et al. Cost Accounting: Management's Operational Tool for Planning, Control, and Analysis. 3rd ed. Dallas: Southwestern Publishing Company, 1962.
- Mayers, Lewis. The American Legal System. New York: Harper and Row, 1955.
- McDougall, Curtis D. Covering the Courts. New York: Prentice-Hall, Inc., 1946.
- McLean, John H. and Robert W. Haigh. The Growth of Integrated Oil Companies. Boston: Harvard University Press, 1954.
- Moody's Industrial Manual. New York: Moody's Investor's Service, Inc., 1965.
- Neale, A. D. The Antitrust Laws of the United States of America. New York: Cambridge University Press, 1968.
- Nourse, Hugh O. Regional Economics. New York: McGraw-Hill, 1968.
- Petroleum Facts and Figures. New York: American Petroleum Institute, 1959.
- Petroleum Facts and Figures. New York: American Petroleum Institute, 1967.
- Phillips, Almarin. Market Structure, Organization and Performance. Cambridge: Harvard University Press, 1962.
- Richardson, Harry W. Regional Economics. New York: Praeger Publishers, 1969.
- Ritter, Lawrence S. and William L. Silber. Money. New York: Basic Books, Inc., 1970.

- Smith, Adam. Wealth of Nations. Ed. Edwin Cannan. New York: Modern Library, Inc., 1937.
- Stocking, George and Myron Watkins. Cartels or Competition? New York: Twentieth Century Fund, 1948.
- Sumner, Marcus. Competition and the Law. Belmont, California: Wadsworth Publishing Company, 1967.
- Thompson, George C. and Gerald P. Brady. Antitrust Fundamentals. Belmont, California: Wadsworth Publishing Company, Inc., 1964.
- Trade Cases. New York: Commerce Clearing House, Inc. (Published Annually).
- Trade Regulation Reporter. New York: Commerce Clearing House, Inc.
- Van Cise, Jerrold G. The Federal Antitrust Laws. Washington, D.C.: American Enterprise Institute, 1967.
- Wilcox, Clair. Public Policies Toward Business. Homewood, Illinois: Richard D. Irwin, Inc., 1966.
- Wolf, Ronald H. "Identical Pricing and TVA: Toward More Effective Competition," The Economic Impact of TVA. Ed. John R. Moore. Knoxville: University of Tennessee Press, 1967.

Articles

- Bizal, Robert B. "Survey of Operating Refineries in the United States," Oil and Gas Journal (April 15, 1963).
- Erickson, Walter B. "Economics of Price Fixing," Antitrust Law and Economics Review, II, No. 3 (Spring, 1969), 83-122.
- Hays, James S. and Jack L. Ratzkin. "Trade Association Practices and Antitrust Laws," Harvard Law Review, XXV (July-August, 1947), 501-520.
- Heflebower, R. B. "Conscious Parallelism and Administered Prices," Perspectives in Antitrust Policy. Ed. Almarin Phillips. Princeton: Princeton University Press, 1965, 88-116.
- Hotelling, Harold. "Stability in Competition," The Economic Journal, XXXIX (1929), 41-57.
- Kaysen, Carl. "Collusion under the Sherman Act," Quarterly Journal of Economics, No. 65 (1951).
- Kuhlman, John M. "Nature and Significance of Price Fixing Rings," Antitrust Law and Economics Review, II, No. 3 (Spring, 1969), 69-82.

- Manne, Alan S. "Oil Refining: Cross-Elasticities of Supply," Quarterly Journal of Economics, LXV (May, 1951), 214-236.
- _____. "Oil Refining: Yield Coefficients and Actual Prices," Quarterly Journal of Economics, LXV (August, 1961).
- Marcham, Jessie W. "The Nature and Significance of Price Leadership," American Economic Review, XLI (1951), 891-905.
- Mund, Vernon A. "Identical Bid Prices," Journal of Political Economy, LXVIII (April, 1960), 150-159.
- Nelson, W. L. "Again--How to Allocate Operating Costs on Asphalt," Oil and Gas Journal (May 3, 1965), 129.
- _____. "Asphalt in Various World Crude Oils," Oil and Gas Journal, (December 7, 1964), 170-171.
- _____. "How to Allocate Operating Costs to each Product," Oil and Gas Journal (August 5, 1963), 108-109.
- _____, and Suresh Patel. "How Much Asphalt in Crude Oils?," Oil and Gas Journal (February 17, 1964), 120-123.
- Nicholls, William H. "The Tobacco Case of 1946," American Economic Review, Proceedings, XXXIX (1949), 284-296.
- Rostow, E. V. "The New Sherman Act, an Instrument of Progress," University of Chicago Law Review, XIV, No. 4 (1947), 567-600.
- Stigler, George J. "The Kinky Oligopoly Demand Curve and Rigid Prices," Journal of Political Economy, LX (1947), 432-449.
- "Survey of Operating Refineries in the United States," Oil and Gas Journal (March 28, 1966).
- Sweezy, Paul M. "Demand under Conditions of Oligopoly," Journal of Political Economy, XLVII (1939), 568-573.

Cases

- Addyston Pipe and Steel Company v. United States, 175 U.S. 211 (1899).
- American Column and Lumber Company v. United States, 257 U.S. 377 (1921).
- American Tobacco Company, et al., v. United States, 328 U.S. 781 (1946).
- Federal Trade Commission v. Cement Institute, et al., 333 U.S. 683 (1948).

State of Georgia v. Evans, 316 U.S. 159.

Milgram v. Loew's, Inc., 94 F. Supp. 416.

Standard Industries, Inc., and Metropolitan Paving Company, Inc., v. Skelly Oil Company, et al. U.S. District Court for the Western District of Oklahoma. Trial Transcript.

Theatre Enterprises, Inc. v. Paramount Film Distributing Corp. 346 U.S. 537 (1954).

Triangle Conduit and Cable, Inc. v. Federal Trade Commission, 168 Fed. 2d 175 (1948).

United States v. International Harvester, 276 U.S. 693 (1927).

United States v. Socony-Vacuum Oil Co., 310 U.S. 150 (1940).

United States v. Trenton Potteries Co., 273 U.S. 392 (1927).

VITA

Dale Rodney Funderburk

Candidate for the Degree of

Doctor of Philosophy

Thesis: ECONOMIC AND LEGAL IMPLICATIONS OF LIQUID ASPHALT PRICING IN OKLAHOMA, 1961-1965.

Major Field: Economics

Biographical:

Personal Data: Born in Laird Hill, Texas, October 2, 1941, the son of Mr. and Mrs. Jack D. Funderburk.

Education: Graduated from Talco High School, Talco, Texas, in May, 1960; received the Bachelor of Arts degree from East Texas State University, Commerce, Texas, in May, 1964, with a major in Economics; received the Master of Science degree from Oklahoma State University in May, 1968, with a major in Economics; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in May, 1971.

Professional Experience: Graduate Assistant, Economics Department, Oklahoma State University, 1964-1967. Assistant Professor of Economics, East Texas State University, since September, 1968.

Professional Organizations: Member of American Economic Association and Southern Economic Association.