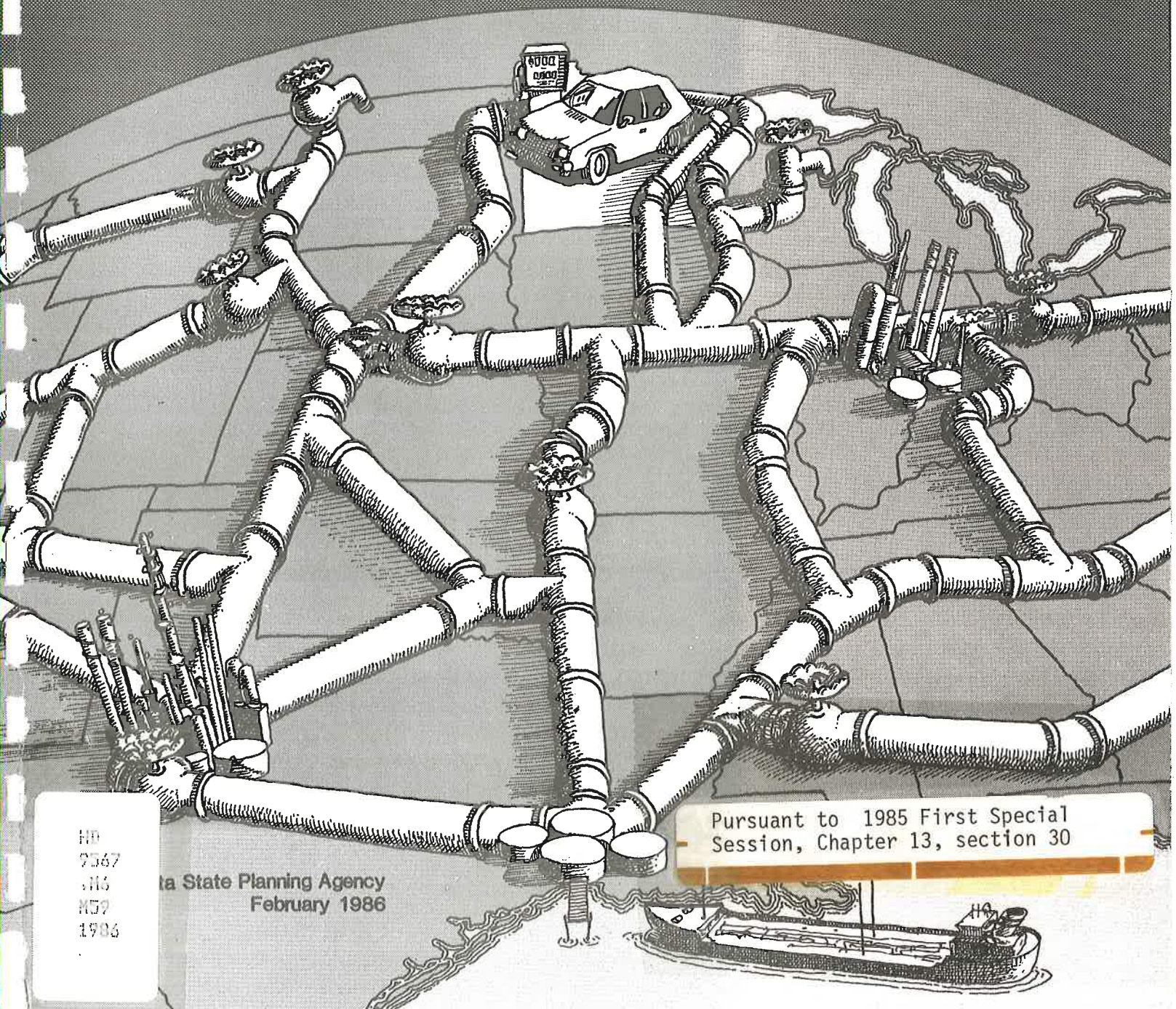
Minnesota Petroleum Marketing Practices Study



Pursuant to 1985 First Special Session, Chapter 13, section 30

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MINNESOTA STATE PLANNING AGENCY

MINNESOTA

PETROLEUM MARKETING PRACTICES

STUDY

FEBRUARY 1986

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The State Planning Agency expresses its appreciation to the state agency staff and the consultants who worked on this first comprehensive study of petroleum marketing practices in Minnesota. We especially are grateful for the review and comments provided by the industry - refiners, jobbers and retailers as well as industry trade organizations and consumer organizations.

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EXECUTIVE SUMMARY

LEGISLATIVE MANDATE

The State Planning Agency was directed by the Legislature to report on the likely effect that current or emerging petroleum marketing practices in Minnesota will have on consumers, on franchisees, on other retailers, and on other segments of the gasoline marketing industry in Minnesota. The Agency was to consult with all segments of the industry and report on any problems or inequities occurring or likely to occur because of current or emerging gasoline marketing trends in this state. (Minnesota Laws, 1985, Special Session, Chapter 13, Section 30.)

METHODOLOGY

The first step in the study process adopted by the State Planning Agency (SPA) was the development of a workplan designed to articulate the proper areas for investigation. This workplan was distributed to petroleum industry trade organizations and other individuals, known to have an interest in the study, for their review and comment. Trade groups were specifically asked for input and encouraged to submit additional information at any time.

A problem identification report was the second major process step. This report was prepared and distributed to an expanded

list of persons and organizations identified as having an interest in the study. Public meetings were held to discuss these initial findings and solicit comments for the final report to the Legislature.

After review of the comments obtained in step two, a draft report was assembled. This draft was distributed for a final round of meetings prior to delivery of a final draft to the Legislature.

The SPA contracted with other agencies in Minnesota state government to use their resources in areas of particular expertise. Both the Department of Energy and Economic Development and the Attorney General's Office conducted research for this study.

The SPA conducted primary research on gasoline pricing behavior. The Agency conducted primary research on pricing and consumer satisfaction for some common automobile repairs and services statewide. This research has been filed with the legislative reference library as two separate reports, "Minnesota Gasoline and Automobile Repair Prices" and "Minnesota Automobile Repairs and Services; Consumer Attitudes on Quality, Availability and Satisfaction."

The SPA also conducted extensive research using secondary sources including the U.S. Department of Energy, U.S. Department of Commerce, American Petroleum Institute and MN Department of Revenue.

The underlying reason for this study was an allegation by the service station operators that the major refiners were engaged in unfair competition. The primary allegation was that the major refiners are engaged in a campaign to monopolize the retail level of the industry. Major refiners were alleged to be engaged in unfair wholesale and retail pricing behavior to achieve this objective.

Gasoline marketing in Minnesota can only be understood in the context of the international petroleum market. The approximate price of gasoline in Minnesota is determined by the international price for crude oil. [For the past 15 years the price for crude oil has in large part been determined by the production decisions of the OPEC cartel and the policy decisions of the governments of the western industrialized democracies, not free market competition.]

The oil business is dominated by a small number of large vertically integrated firms. Eighty percent of U.S. refining capacity is controlled by less than 20 major vertically integrated firms. Retail gasoline sales account for a very small share of total industry profits. Oil production is the reported source of seventy to eighty percent of the profit.

From 1972 to 1981 the U.S. industry operated under government mandated price and product allocation controls. Controls were removed in 1981. The behavior of the retail level of the market is very different for the two eras.

The period since decontrol has been a period of realignment in the industry. Many major integrated firms have increasingly turned to marketing in selected regions rather than nationally. There have been several major mergers.

A sound factual analysis of market behavior is not possible. The Agency found currently collected data to be inadequate. Consequently, our analysis of both national and Minnesota markets is based upon inference and expert opinion.

Currently, and for the near term future, there is likely to be an abundant supply of crude oil. U.S. oil demand peaked in 1978. It is projected to grow at 1% per year until the year 2000. U.S. gasoline demand peaked in 1978, declined until 1982 and has slowly increased since 1982 due largely to conservation measures. U.S. gasoline marketers are essentially seeking shares of a shrinking or low growth pie.

In 1984 domestic sources accounted for 70% of all U.S. crude oil and petroleum products. Minnesota imports 100% of our crude oil; in 1984 approximately 45% from Canada, 25-30% from North Dakota, 20-25% other domestic suppliers and less than 5% from non-Canadian foreign suppliers. Minnesota's three local refineries (Koch, Ashland and Murphy) plus Amoco refine between 80% and 90% all gasoline sold in the state. Their share of this market has been increasing.

The supply and distribution system for refined petroleum products is complex. A wide variety of business styles, sizes and relationships are represented. As illustrated by the diagram, Minnesota's refined products can be distributed through one of four distribution channels. Refiners can distribute

directly to company operated stores or to franchise stores. They can distribute indirectly through wholesalers. These indirect distributors, in turn, provide service directly to other wholesalers, gas stations, and private end users, (e.g. farmers). A Broker may obtain refined product and sell it to any level of the distribution system. Brokers may have regular or one time only transactions.

MINNESOTA GASOLINE DISTRIBUTION SYSTEM

REFINERS

DIRECT RETAILERS		*WHOLESALERS*	
COMPANY-OPS	**LESSEE-DEALERS**	**JOBBERS**	**CHAIN DISCOUNTERS**
BROKER *		o Wholesalers o End Users o Company-Ops o Retail Dealers	o Company-Ops o Retail Dealers

* - *Brokers can sell to any or all entities. May be regular supplier or one time deals.*

The complexity of the distribution system makes it technically difficult and prohibitively expensive to monitor pricing behavior. The petroleum distribution industry is the link between the refinery and service station. Middlemen in this connection are known as "jobbers" or distributors. In 1981, 60 percent of the gasoline sold at retail was supplied through jobbers. The number of jobbers and their marketshare increased from 47 to 62 percent during the period of federal controls. However, their numbers have decreased since

decontrol. Marketshare data for the period since deregulation is not available.

Jobbers deliver product which is branded and/or unbranded. They obtain this product from single sources and multiple sources; multisourcing is becoming increasingly common. It is common for jobbers to own retail outlets and operate them as company-ops and/or lease them to dealers. Pricing varies depending on the type of business arrangements vendor has with their supplier(s). The multiple pricing system makes it difficult to track and compare the price charged by the refiner. Available information does indicate the jobber margin (differential between the station and jobber buying price) decreased following decontrol. As a result, profits fell along with the number of jobbers since 1982. The trend is predicted to continue as refiners who distribute directly to their retail outlets compete with the remaining jobbers for marketshare.

It is our conclusion that there is vigorous competition occurring in the Minnesota market at the distribution level. The Agency was unable to determine if the distribution markets have been freely competitive since deregulation.

The distribution system is analogous to the tail of the dog, the rest of the industry wags it. This segment of the industry has been undergoing tremendous changes in response to the major upheavals at the crude production and refining levels in the past 15 years.

Information from a number of sources indicates, that the traditional service station population has shrunk by one third to one half in the past 10 to 15 years, both nationally and in

Minnesota. Service stations have earned most of their profit on their repair and miscellaneous auto products businesses. Specialized gasoline sellers and specialized/highly capitalized automobile repairers and auto parts stores now have a significant share of the traditional service station's markets. This has led to major changes in the way consumers purchase gasoline, repairs and auto parts.

In gasoline retailing styles there has been a revolutionary increase to self-service. Customer preference for self-service increased from near zero in the 1960's to fifty percent in 1980, and reached seventy percent in 1984. One ramification of this has been the growth of convenience stores which frequently use gasoline to promote sales of other products or services. Simultaneously there has been a trend to high volume pumper stations that sell gasoline only. Retailing trends in Minnesota have been similar to those in the rest of the nation except our major convenience store brand (Super America) has an atypically large marketshare. A current trend that could further accelerate the decline in the number of petroleum marketers is the rising cost and lack of availability of liability insurance for underground gasoline storage tanks.

The effect of ethanol on the gasoline marketing system remains to be seen. The SPA's research found that two thirds of the seven-county metro area's stations sell gasoline blended with ethanol. Minnesota is one of few states with a high industrial ethanol fuel tax break having no restriction on the ethanol's source. (Other states have enacted source restrictions but their constitutionality has not yet been

affirmed in the courts.) Our November gasoline price survey did not identify any significant price difference at the pump for regular gasoline versus regular gasoline blended with ethanol. Theoretically, there could be a three cent price difference as a result of the ten cent per gallon government subsidy for ethanol blended gasoline (four cent state rebate plus six cent federal rebate.) Industry experts contend that the price of unblended regular has been cut to meet the lower price of the regular blended with ethanol.

In the Minnesota service and repair industry the trend has been towards businesses that sell repairs and services without also selling gas. In the urban areas this has created specialty repair shops predicated upon a high volume of specialized services or repairs, e.g. Midas muffler, Rapid Oil Change. In less densely populated areas, the trend is towards general repair shops.

Despite the reduction in the number of traditional service stations in Minnesota, overall, seventy to ninety percent of the one thousand Minnesota consumers we surveyed stated they felt the availability and quality of automobile services and repairs were good to very good. However, industry experts expressed concern about future problems in low volume markets with quality and availability due to the increased technological sophistication of new cars. Prices for some typical repairs varied wildly within geographic regions as well as between the rural, urban non-metro and metro regions. Generally prices varied by two hundred percent when comparing rural prices to the

seven-county metro area prices, and one hundred percent, intra-regionally, in all three regions.

There are federal and state antitrust laws, as well as other general and industry specific statutes intended to promote fair and free competition. Whether existing legislation offers effective protection against anticompetitive actions and unfair practices is a matter of perspective. Some contend that the laws are difficult to enforce because of their complexity and/or the standard of proof required. Others contend that the laws are an effective deterrent against truly anticompetitive action and unfair practices, citing the infrequency of successful actions as evidence.

Both divorcement legislation, which prohibits ownership and operation of retail stations by refiners, and open supply legislation, which prohibits contracts which require dealers to purchase their products exclusively from a single supplier, have been proposed but not adopted at the federal level and in a number of states including Minnesota. The increasing cost and availability of liability insurance, and any future legislation enacted with respect to leaking underground gasoline storage tanks, may impose, directly or indirectly, additional costs on gasoline retailing.

Absent any major political or military conflict, a shortage of oil is not likely in the next five years. In the event of a supply disruption, the current federal energy policy is to let price allocate supply. This approach is entirely different than the price and allocation regulations that existed during

Minnesota's last shortage in the late 1970's. State Rules are in place that are predicated upon the old price and allocation regulations. Under current policy, the ability to pay would determine gasoline and fuel oil allocation.

I. A BRIEF HISTORY OF THE OIL INDUSTRY

An awareness of oil industry history is important for policy makers. The evolution of the multinational vertically integrated oil companies that occurred during the first half of this century shapes the industry today; and will likely determine the industry of tomorrow.

Each decade of this century has seen a major shift in the industry. First, was the breakup of Standard Oil, followed by the automobile revolution and unimaginable discoveries of oil. The 1930's saw the start of government intervention in the marketplace in the form of conservation measures to ensure that the remaining oil reserves were not depleted too quickly. After the war the entire globe had an extended engagement with the exploratory drillers. The gas guzzling of the 1960's was abruptly throttled by OPEC in the 1970's.

As policy makers look to the future, perhaps the single most important lesson in history is that the industry regularly goes through boom and bust cycles. "Every ten years or so since 1920, the experts have announced that the oil or gas reservoirs in the United States are about to run dry."[1]

Of course, today the conventional wisdom is that oil is an exhaustible resource and we can see the end on the horizon. Before considering this brief review of the past, consider one unorthodox vision of the future.

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1. - Osborne, David, "The Origin of Petroleum", The Atlantic, February 1986, p. 49.

(The setting is) ... a wilderness vista of granite outcroppings, thick forests, and innumerable ponds and lakes, **not unlike the lake country of Ontario and northern Minnesota.**

This June (1986), if everything goes as planned, a power company owned by the Swedish government will set up a drill rig deep in the woods of the Siljan Ring, ... Slowly, steadily, for the next year or more, this drill will chew its way through the granite. ... Eventually the drill will penetrate to 5,000 meters--more than three miles beneath the surface.

The Swedes are looking for oil or gas. If they find either, all our notions about the origin of petroleum may crumble, and with them our fears of ever running out of fuel.

... our drills may already have found much of the world's oil, but not its methane--which we know as natural gas.

If Gold (the theorist) is right, the Earth may contain a virtually inexhaustible supply of gas. Huge reservoirs may exist where geologist have never thought to look.

... In short, Gold's theory promises a modern miracle.[2]

While some claim this is far fetched, it is just the kind of miracle the petroleum industry has regularly experienced throughout this entire century.

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2. - ibid. (Atlantic) pp. 39-41.

A. *The Consolidation of an Industry; 1900's to the 1940's.*

This section is included to provide a rudimentary explanation of how the industry became organized into the multinational vertically integrated structure of today. There are three salient periods. The antitrust actions against the Standard Oil Trust. The industry boom in the twenties. The start of government intervention in the industry in the thirties.

In the early days of the petroleum industry, John D. Rockefeller had the notion that free competition was inefficient. The anarchy of free markets was disorganized and wasteful.

> *(The Standard Oil Trust) was the kind of order John Rockefeller had been working for ever since he bought his first refinery. Here was the first great monster of corporate law, born full-blown and mighty, and without a sound louder than the scratch of pen. So quietly was this first trust brought into being that the public scarcely knew of it at all until six years later...*[3]
>
> *John Rockefeller's ambition to found a trust-monopoly cannot be charged wholly to his appetite for money. The man's mind craved order and efficiency. ... Hence he sought to eliminate competition. Competition was disorder. Often it was anarchy.*[1]

Mr. Rockefeller dedicated the resources of his Standard Oil Trust to organizing the industry into the most efficient marketing and production system he could, a vertically integrated monopoly.

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3. - Holbrook, Stewart H., The Age of the Moguls, (New York: Harmony Books, 1953), pp. 131-32.

4.- ibid., p. 132.

... John D. Rockefeller's original Standard Oil empire was founded on the monopolistic control of intermediate markets. Through a syndicate of some thirty-three companies the Standard Oil Trust achieved a position of dominance at the refining level (controlling 85 percent of refining capacity at one point) which was then effectively protected by integrating backwards into transportation. As a result of its dominance in refining and its position in transportation, the Trust was able to effectively control the entire industry at all levels.[5]

It is important for policy makers to understand the strategic importance of the refining and transportation levels of the industry. The concentration of pipelines and refining capacity in the hands of a few firms is a prominent feature of the industry throughout the twentieth century.

New oil, the advent of the automobile and the consolidation of the industry into a few vertically integrated firms characterized the first third of the century.

Even more important than the dissolution of the Standard Oil Trust in altering the structure of the industry after 1911, was the violent transformation and expansion in demand (for oil), with skyrocketing sales of automobiles, and the corresponding vast increase in supply, ... Integration in various degrees and directions - geographic as well as vertical, forward as well as backward - was one of the techniques of competitive thrust, parry, and counterthrust.[6]

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5. - Allvine, Fred C., Patterson, James M., Competition Ltd.: The Marketing of Gasoline, (Bloomington, Indiana University Press, 1972), pp. 215-6, from DeChazeau and Kahn, p. 115.

6. - DeChazeau and Kahn pp. 87-88,

During the World War I era, due to major new discoveries the supply of oil was increasing dramatically. Between 1909-1913, for example, there was a 50% increase in crude output over the preceding 5 year period.[7]

The decade of the 1920's was characterized by an explosion in the demand for gasoline. This was created by the explosion in the number of automobiles. It is estimated that vehicle registrations tripled, from 7.6 million to 26.5 million, while the number of retail petroleum distributors tripled, from between 75,000 and 100,000 to an approximate 300,000.[8] (For comparison, the best estimate is that in 1985 there are slightly more than 100,000 retail petroleum distributors.)

It was during this period that the filling station took over the retail market. At the start of the decade, retail gasoline sales occurred at grocery stores, general stores, hardware stores, accessory stores and auto dealers in addition to the filling stations that represented 47% of the market. By 1929 filling stations market share was 92%.[9]

The retail marketing of the 1920's bears many similarities to today's retail market. Refiners operated a relatively few retail outlets that sold relatively high volumes in urban markets.

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7. - Williamson, Harold F., et al, The American Petroleum Industry, The Age of Energy 1899-1959, (Evanston: Northwestern University Press, 1963) p. 18.

8. - ibid., p. 469.

9. - ibid., p. 469.

... the integrated companies, by leasing independently-owned outlets, or by contracting with independent dealers to handle their products, exercised much more control over the distribution of their own products than the ownership pattern for retail outlets alone would suggest. This was particularly true to the extent that the integrated companies operated station "chains" in the large urban marketing areas. ... the "chains," with less than half the total number of stations ..., sold approximately three times (by value) as much as the stations owned by individuals;...[10]

The domestic petroleum industry of the 1920's is succinctly captured by the following excerpt:

Independent or non-integrated refiners, wholesalers and jobbers, and retail establishments still played an important role in the marketing process. The relative position of non-integrated firms in the market had been reduced, however, at least in the distribution of motor fuel, by the expansion of the major refiner-marketing companies into the retail field. This development in turn was a part of a broad integration movement which affected all branches of the industry during the 1920's.[11]

The oil glut of the 1920's lead to government regulations, to everyone's delight, that promoted conservation of the oil that was in the ground. Concern that all the oil was being pumped out of the ground too quickly lead to government regulations, called prorationing, to conserve the underground oil pools.* While this was widely hailed as enlightened

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10. - ibid., pp. 487-488.

11. - ibid., p. 493.

* - Oil is an unusual type of property. The property rights of the land over an oil field provide little guidance about the ownership of the pool of oil underground. For a time, success in the oil business was attained by sticking the most wells into a given pool and pumping out the most oil the fastest. This was known as the rule of capture.

policy, and it is beyond the scope of this study to discuss prorationing in detail, it is important to note that the supply of oil was being artificially controlled through the cooperative efforts of government and producers. This, of course, was done in the name of national security.

B. *Internationalizing the Industry; The Post-War Era.*

After the Second World War, the entire international economy was reordered. The impact of this was nowhere more significant than in the oil business. From the forties through the sixties the energy policy of the U.S. was to conserve domestic supplies, exploit foreign supplies, while simultaneously limiting foreign imports into the U.S. During this period there was a continued effort on the part of the producers and government to restrict the supply of oil.

> *Throughout this period (1946-1959) the major producing areas were under more or less constant pressure to keep domestic crude oil output from swamping the market. The burden of this pressure in turn fell largely on the various state regulatory agencies as a part of their obligation to conserve domestic crude oil reserves. ... The regulatory agencies ... maintained a substantial margin between actual production and the average productive capacity of American oil fields.*[12]

This was the period in which the multinational firm came of age. American multinational firms fanned out across the globe after the war in quest of oil reserves; along with the new found American role as the unchallenged leader of the free world.

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12. - op. cit., Williamson, p. 813.

> *... the global expansion of five giant American companies, ... (resulted in) their joint control, with a few foreign interests,* **of something like 90 per cent of the "free world's" oil reserves** *outside the United States.*[13]

This internationalization lead to a new dynamic in the industry and therefore in U.S. public policy. American firms could now profit from their nondomestic production (imports into the U.S.) as well as from their domestic production.

For the sake of illustrating how government and the oil industry cooperate in controlling supply and therefore in distorting markets, one vignette from the 1950's will be highlighted. At the time it was believed that foreign imports needed to be restricted so that profits would fund continued domestic exploration. The oil companies' voluntary import controls failed to keep domestic prices high enough to satisfy the desires of the prevailing powers that be. On March 10, 1959 President Eisenhower ordered mandatory quotas on imports of oil products in the name of national security.[14]

The conventional wisdom of 1959 is captured by this rhetorical question offered at the conclusion of Williamson's 100 year history of the oil industry, the authoritative source so frequently cited in this section. *"Could imports be increased without endangering national security or without increasing tensions among industry members?"*[15] Today, it is difficult for us to understand how public policy could be concerned about increased tension between the oil companies.

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13. - op. cit., DeChazeau and Kahn, p. 7.

14. - op. cit., Allvine, et al, p. 249.

15. - op. cit., Williamson, p. 821.

As noted, a few firms,* later to become popularly known as the seven sisters, controlled 90% of the free world's oil reserves. The western democracies were getting this oil from the third world oil producers under very favorable terms after the Second World War. Throughout the 1950's the producers tried to obtain more favorable terms. In September 1960 they formed the Organization of Petroleum Exporting Countries (OPEC) to bargain collectively with the oil companies. In the twenty years, 1950-1970, the share of profits split between producers and the international oil companies changed from about 50-50 to 80-20.[16] By way of historical perspective, a major 326 page book on competition in the oil industry just cited, copyrighted in 1972, mentions OPEC in only one paragraph! A short fifteen years later, OPEC controls the world's supply oil and is the linchpin in the national security strategy of every major nation on earth.

This type of unforeseeable change seems to be the rule rather than the exception in the oil industry. In this century the industry has had to respond to the breakup of the Rockefeller monopoly, World War I, a glutted market in the 1920's, the depression and government controls in the 1930's, World War II, a glut of supply in the 1950's, supply shortages in the 1970's and most recently decontrol in 1981. This brief history will be completed by a quick tour of the 1970's.

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16. - op. cit., Allvine, p. 263.

* - British Petroleum, Shell, Exxon, Mobil, Gulf, Socal, and Texaco.

C. *The Energy Crises*.

> *In the 1970's, the price of internationally traded oil increased by 2,000 percent in nominal terms. This was preceded by a decline in the 1950's and a period of relative stability in the 1960's. The 1970 Libyan oil price breakthrough, the 400 percent oil price increases in 1973, and the 200 per cent oil price increases during 1979-80 were the three major events which shook the oil market during the 1970's. In all three cases a sequence of political events took place beforehand which created the economic environment for these oil price increases. These developments could not have been predicted purely on the basis of economic analysis, which ignored vital political considerations.*[17]

The preceding preface to a book about oil in the 1980's succinctly summarizes the emergence of OPEC onto center stage in the 1970's.

The 1970 Libyan oil price breakthrough came about because of market conditions and political conditions.

> *... crude (production) spare capacity was decreasing rapidly due to a rapid increase in oil demand, and the tanker market was very tight.*
>
> *Meanwhile, another political event took place. In Libya, Qaddafi, a radical colonel, took power from a conservative monarch. Qaddafi understood the tactical situation created in the international oil market by ... events and demanded a larger per barrel share for the government. ... Soon the other oil companies followed Occidental's capitulation and agreed to meet Qaddafi's demands. ... Thus, Libya had showed to the other OPEC countries how vulnerable oil companies are in a tight supply situation and how OPEC could play oil companies against each other.*[18]

One of the key factors was the tight international supply situation. This occurred in part because international production was operating at near capacity.

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17. - Aperjis, Dimitri, The Oil Market in the 1980's, (Cambridge: Ballinger Press, 1982), p. 3.

18. - ibid., p. 3.

The initial shortage felt in the U.S. came about due in large part to U.S. domestic policies. It is often forgotten that the first shortage started before the October 1973 OPEC embargo. Wage and price controls were implemented by then President Nixon in August 1971 and they had a major impact on the petroleum industry.* The following excerpt from a Federal Trade Commission (FTC) report made public in July 1973 illustrates the climate prevailing shortly before the October embargo.

> *The current petroleum shortage can be traced to six separate, but interrelated factors:*
>
> 1. *The Oil Import Control Program;*
> 2. *Interdependent and cooperative behavior by the largest oil firms;*
> 3. *The failure of these firms to construct refinery capacity sufficient to meet current needs;*
> 4. *Government induced barriers to entry which have inhibited non-integrated firms from entering into refining;*
> 5. *An insufficient supply of domestic crude for independent refiners; and*
> 6. *The fact that major station gasoline prices have not been allowed to reach their natural level during the period of shortage in certain areas of the country.*
>
> *The Oil Import Control Program was abolished by the President on May 1, 1973. However, it created, and leaves in its wake, a shortage of domestic refinery capacity which will last for at least three or four years. The program restricted crude oil imports and limited imports of refined gasoline practically to zero. In conjunction with other barriers which prevented entry into refining, it created a near monopoly over refining for the huge integrated firms who control the industry.*[19]

19.- "Preliminary Federal Trade Commission Staff Report on its Investigation of The Petroleum Industry", prepared at the request of Henry M. Jackson, Serial No. 93-15 (92-50), p. 38.

* - See Mandatory Petroleum Price and Allocation Regulations, pages A21-A25.

In retrospect there is general agreement that there was insufficient domestic refining capacity to meet demand. Thus, even if there had been an excess supply of crude oil, there would have been a shortage of refined products. This, despite frequent industry public testimony that there was sufficient domestic refining capacity to meet demand.

The federal Oil Import Control Program was a major variable in the equation. The intent of the program was to prohibit foreign crude oil and refined product imports as the means to the objective of keeping the U.S. energy independent.

> *In mid January of 1970, a presidential task force established to study import quotas recommended the substitution of a tariff system for the existing quota program;. It further recommended free access of Canadian oil into the United States. The report stated:*
>
> > *"A majority of the task force found that the present oil import system does not reflect national security needs, present or future, and is no longer acceptable. ... Besides costing consumers an estimated five billion dollars each year..., the quotas have caused inefficiencies in the marketplace, have led to undue government intervention, and are riddled with exceptions unrelated to the national security."*
>
> *George C. Schultz, who (was then) Secretary of the Treasury and was then chairman of the presidential task force (and is currently Secretary of State), stated, "... I doubt whether the cost of carrying such a subsidy for a single favored industry has ever been imposed on consumers by any government, any time, anywhere." In mid August of 1970, however, President Nixon rejected the recommendations of his task force and advocated retention of the quota system.*
>
> *... On May 1, 1973, President Nixon finally abolished the mandatory oil import program.*[20]

20.- "Competition In The Petroleum Industry", report to the public by Warren Spannaus, Attorney General of Minnesota, March 1974, pp. 13-14.

It is beyond the scope of this study to discuss at length the impacts of price and allocation control period, 1972-1981. Prices from the wellhead to the pump were controlled, creating a number of non-market economies. The following is one example of a market distortion during this period. Recall that petroleum marketers were given allocations of product to sell. But, wholesalers could get new allocations of product if they opened new outlets. Consequently, the period of price and allocation controls saw a dramatic increase in the wholesaler supplied outlets and a concomitant dramatic increase in wholesaler marketshare. (see page 125.) There also were incentives during this period that resulted in the construction and operation of certain types of refineries. After deregulation, most of the refineries were mothballed or permanently closed.

The following analysis of the 1979 oil crisis illustrates not only the cause of the shortage but also profiles the operations of the multinational firms that dominate the industry.

> *It has already been mentioned that at the beginning of 1978 crude oil stocks were unusually high because of stockbuilding on the part of companies in anticipation of an OPEC price increase in December 1977. At the beginning of 1979 crude oil stocks were marginally less (by about 3 percent) than what they had been in the previous year, and this despite the Iranian disruptions during the autumn of 1978.*
>
> *... regardless of the cutoff in Iran, there was enough oil in the international market to meet demand during the first half of 1979. Why, then, did prices skyrocket in 1979 while they decreased in 1978, even though the same amount or even less oil was available? To be able to answer this question, a closer look at the daily operations of the oil market is necessary.*

The oil trade is still dominated (although to a lesser degree than in 1973) by the major oil companies. These companies either own crude reserves (mainly in Organization of Economic Cooperation and Development (OECD) countries), or they have access to government-owned crude through long-term concessions (mainly in OPEC countries). Thus, these companies have access to relatively well assured oil supplies.

The major oil companies continuously try to match their supply of crude with the demand for products from their refineries. However, a complete balance of demand and supply is very hard to achieve, and in most cases an oil company will either have a surplus or a shortage of crude or a specific product. Balance is achieved by using the spot market, whose total volume or trade is only a small portion of total oil trade (about 2-5 percent). In addition major oil companies normally have contracts with third parties, which could be any oil company or refinery, to which they sell part of their crude supply. Small independent companies obtain most of their supplies from either the major companies, through their third party sales, or in the spot market.

The Iranian production cutoff (December 1978) impacted mainly British Petroleum (BP) and Shell Oil, because they had a 40 percent and 14 percent share respectively of the Iranian exports. Exxon, Mobil, Gulf, Socal, and Texaco had a 7 percent share each, while Companie Franchaise du Petrole (CFP) and Iricon had 6 and 5 percent respectively.

Additional supplies to compensate for the cutoff in Iranian production came from several OPEC countries. Because of trade secrets, it is hard to estimate how much of these additional oil supplies were lifted by each major company. However, using the known share of oil each company lifts on the average, an estimate of how the additional oil supplies were lifted could be derived. For example, the share of Arabian American Company (ARAMCO) partners are: Exxon, 30 percent; Socal, 30 percent; Texaco, 30 percent; and Mobil, 10 percent. Thus, it could be presumed that the additional Saudi Arabian oil was lifted as follows: Exxon, Socal and Texaco about 0.6 mmbd each and Mobil 0.2 mmbd. In Nigeria additional supplies were lifted by BP and Shell; in Venezuela by Exxon and Gulf; and in Kuwait by BP, Gulf, and Shell. Some of the additional supplies were sold directly into the spot market by the producing country because of the high prevailing prices there.*

Despite some ambiguities the point can be made that the Iranian production cutoff had a major impact on BP and Shell and a minor impact on the five American majors, which were able to lift additional crude from other sources, thus covering their losses in Iran.

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* - *mmbd = million metric barrels per day*

The immediate reaction of the oil companies to the cutoff of Iranian supplies was to invoke the force majeure clauses in sales contracts. Thus, if company A lost its supplies from Iran, it could invoke a force majeure in its sales contract to company B. The latter would then invoke a force majeure to its own customers, thereby spreading the impact of the cutoff in Iranian production throughout the international oil market. For example, BP had a third party sales contract with Petrofina. When BP lost its supplies from Iran, it invoked a force majeure clause in its contract with Petrofina. The latter was then forced to invoke a force majeure clause in its sales contract of North Sea crude.

In other words the major oil companies started reducing supplies to third parties in an effort to insure that they would be able to cover their own crude needs. As a result pressure was brought on the small independent oil companies, which saw their supplies being at risk. These companies were forced to enter the spot market or to negotiate contracts directly with producing countries.

Consequently, oil-producing countries saw that they could obtain higher oil prices either by selling in the spot market or by negotiating with small independent companies. For example, Iran was able to obtain much higher prices by contracting 2.2 mmbd to thirty-two different companies. (Note that the prerevolution Iranian consortium had mainly nine companies lifting more than 4.0 mmbd.)

To summarize, the lack of accurate information about how much oil was actually on the market and the fact that oil producers were producing close to their allowable limits created a panic in the market. Consequently, the major oil companies decreased supplies to third parties by invoking force majeure, which increased the pressure on the small independent oil companies, who became desperate for oil supplies and were forced to go into the spot market or negotiate directly with oil-producing countries. Israel and South Africa, who lost their supplies from Iran, must also have entered the spot market. Thus spot market prices increased considerably and OPEC realized that it was clearly in its interest to divert additional production into the spot market. It also capitalized on the opportunity to increase the price of the market crude three times in a period of six months. This panic also induced some oil companies to hold larger stocks, which created artificial shortages and intensified the aforementioned process. Finally, a heavy winter in Europe, which lead to a depletion of heating oil stocks early in the winter and forced some European companies to enter the spot market, aggravated the entire situation.

However, if the oil companies panic triggered the previously (sic) process, the performance of most governments was no better. Government officials reinforced the panic by making statements that there was a short-fall of 2 mmbd in the oil market.

It took the IEA two months to take any action; and when the IEA decided to decrease oil consumption by 5 percent (whatever this means) it was left up to each member to introduce the necessary measures. Had IEA taken more drastic measures, prices could very well be much lower today.

On several occasions there was disagreement among industrial countries. For example, France and other European countries proposed to put a limit on prices of imported crude and (refined) product in an effort to decrease spot market prices. However, Germany and Japan objected to such suggestions.

While several governments, including the United States, initially urged the companies to abstain from the spot market to avoid large price increases, these governments later urged companies to enter the spot market to rebuild their stocks. The most notable of all was, of course, the U.S. subsidy program for middle distillates, which led to the previously mentioned diplomatic episode.

The following conclusions can be drawn from the 1979 crisis. The oil market is too uncertain and too volatile to be operated close to capacity because psychological reaction by governments of oil-importing countries or by companies could lead to substantial price increases. ... [21]

Three major conclusions are reflected in the above discussion that remain germane today. First, one major reason for the 1979 shortage was a international production system that was operating at or near capacity. With the system operating at full capacity, the production cut rippled through the industry in all corners of the globe. Second, when the initial supply cuts were made, the major vertically integrated companies cooperated to pass it through to the non-integrated independents. Thus, independent refiners, suddenly dependent on the spot market for crude supplies, injected panic buying into the market. Third, at the international level, the governments

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21.- op. cit., Aperjis, pp. 17-21.

of the western industrialized nations demonstrated little ability to cooperate effectively on energy policy. (Appendix B discusses the potential impacts in Minnesota if an oil shortage occurred in the near future assuming present Federal energy policies were in place.)

D. *Deregulation*.

On January 28, 1981, President Reagan ended the period of price and allocation controls, ushering in a new era in the history of the U.S. petroleum industry. At the national level, markets would be used to determine price, allocate supplies and dictate business structures. Given the history and the structure of the industry, there is good reason to be concerned that at least the international markets may not operate in a free or fair manner, which in turn can have significant impacts on our national and local markets.

This study has attempted to identify and describe the current profile of the retail gasoline marketing industry. The retail level cannot be understood without understanding the upstream behavior of the firms in this industry. Our attempt to determine the underlying forces shaping the retail level of the market were continually frustrated by a lack of reliable information.

A significant body of information was collected during the 1970's by the Department of Energy (DOE). Unfortunately, the trend towards collecting better information for policy makers was reversed in 1982 by an executive order to reduce government

reporting requirements. In the end, our conclusions proved to be similar to those of the Minnesota Attorney General in 1974.

> *The investigation by this office has made clear that it is extremely difficult to obtain the reliable factual data that is essential to a definitive government policy. ... The petroleum industry is so large, and its influence on American life so great, that we can no longer afford to determine governmental policy in the absence of complete and reliable information.*[22]

22.- op. cit., Spannaus, pp. 20-21.

II. BACKGROUND

The Minnesota retail petroleum industry must be placed into a useful context for analysis. This section will provide that context for both retail petroleum marketing in general and Minnesota's retail petroleum industry in particular. A profile of the U.S. petroleum industry will be presented. This will be followed by a discussion of vertical integration in the energy industry. Finally, a discussion of how the industry operates at the retail level will be provided.

A. *Context: The U.S. Petroleum Industry Profile*.

This section will present several different perspectives for assessing the relative power of the U.S. energy companies. The most important point is that most profits in this industry are accounted for at the crude production level. The profits from the retail level of the industry could be termed virtually inconsequential to the industry giants.

To properly understand the relative ranking of these multinational vertically integrated firms we would want to know the size and location of their: known reserves, their pipelines and their refineries. It is noteworthy that earnings of Exxon exceed the earnings of the next three competitors combined and the combined earnings of the top four companies exceed all the rest combined.

> *There is no question that Exxon is the nation's No. 1 oil company. With assets of $63.2 billion, sales of $90.9 billion and net earnings of $5.5 billion in 1984, its physical and financial dimensions are so big that it simply dominates everything in sight.*[1]

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1 - 1985 National Petroleum News Factbook Issue, p. 13.

Exxon is the largest corporation in the U.S., based upon net sales.[2] It is perhaps noteworthy that Exxon does not even market their products in Minnesota. There is no single correct method for ranking the size the oil companies. The following chart displays several different categories of comparison.

Relative Ranking of U.S. Energy Companies[3]

	1984 Rank for Total:			*Net Sales Rank Among 500 U.S.*	*Net Earnings (millions)*		
	(Assets	*Sales*	*Income)*	*(Corps.)*	*(1982*	*1983*	*1984)*
Exxon	1	1	1	1	4190	4978	5525
Mobil	2	2	6	3	1213	1503	1270
Texaco (a)	3	3	6	6	1281	1233	306
Chevron (b)	4	5	4	11	1380	1590	1534
Standard (Ind.)	5	4	2	10	1826	1868	2183
Shell	6	7	3	13	1605	1633	1772
ARCO	7	6	10	12	1676	1348	367
Tenneco (c)	8	9	9	19	819	716	631
Standard (Ohio)	9	11	5	24	1879	1512	1488
Phillips	10	8	7	17	646	721	810
Sun	11	10	11	20	537	453	538
Unocal	12	12	8	27	804	626	700
Amerada-Hess	13	13	14	41	169	205	171
Diamond-Shamrock	14	15	13	83	185	(56)	242
Ashland (d)	15	17	19	42	181	103	(173)
Kerr-McGee	16	16	17	111	210	118	65
Pennzoil	17	17	15	147	na	na	na
Murphy Oil	18	19	16	167	158	127	96
Amer. Petrofina	19	18	18	173	15	55	45
Southland (e)	na	na	na	na	101	132	160

(a) - *includes Getty Oil (ranked 13th in 1983) acquired 2/17/84.*
(b) - *Includes Gulf Oil (ranked 8th in 1983) acquired 6/15/84.*
(c) - *Corporate; includes Tenneco Oil Co.*
(d) - *Ashland's fiscal ends 9/30 and the full-years of 1984 and 1983 reflect this aspect.*
(e) - *Southland is the leading independent retailer of gasoline, but not an oil company per se.*
na - *not included in source used; considering the purposes the data can be used for, inclusion not deemed significant.*

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2 - ibid., p. 13

3. - 1985 National Petroleum News Factbook, pp. 13, 16. Primary source: Fortune, April 29, 1985, "500 Largest U.S. Corporations."

Capital spending is another useful proxy for observing where the action is in the oil business. This chart demonstrates relative capital expenditures for the different levels of the petroleum industry. It is immediately apparent that production dwarfs all other segments of the business. It is also apparent that marketing (wholesaling and retailing) requires relatively little capital outlay.

CAPITAL SPENDING

(Millions of Dollars)

Year	Total	Misc.	Marketing	Transport.	Refining	Production
1980	*42,900*	*700*	*1,300*	*2,150*	*5,560*	*33,100*
		(1.6%)	*(3.0%)*	*(5.0%)*	*(13.2%)*	*(77.2%)*
1981	*63,000*	*900*	*1,425*	*1,725*	*7,250*	*51,700*
		(1.4%)	*(2.3%)*	*(2.7%)*	*(11.5%)*	*(82.1%)*
1982	*63,550*	*1,025*	*1.400*	*1,300*	*7,500*	*52,275*
		(1.6%)	*(2.2%)*	*(2.0%)*	*(11.9%)*	*(82.3%)*
1983	*45,600*	*850*	*1,375*	*1,000*	*5,100*	*37,275*
		(1.9%)	*(3.0%)*	*(2.2%)*	*(11.2%)*	*(81.7%)*

(SOURCE: 1985 National Petroleum News Factbook Issue, p. 33. Primary source: Chase Manhattan Bank.)

Another perspective is to examine the reported source of profits. DOE publishes a report on the activities of 25 major energy producing companies known as the Financial Reporting System (FRS) companies. The following table displays the domestic petroleum contribution to net income. Because significant income is derived from international operations, this chart could be misleading to some unknown degree. However, it is likely that the relative magnitude of the income contribution made by each line of business would be similar.

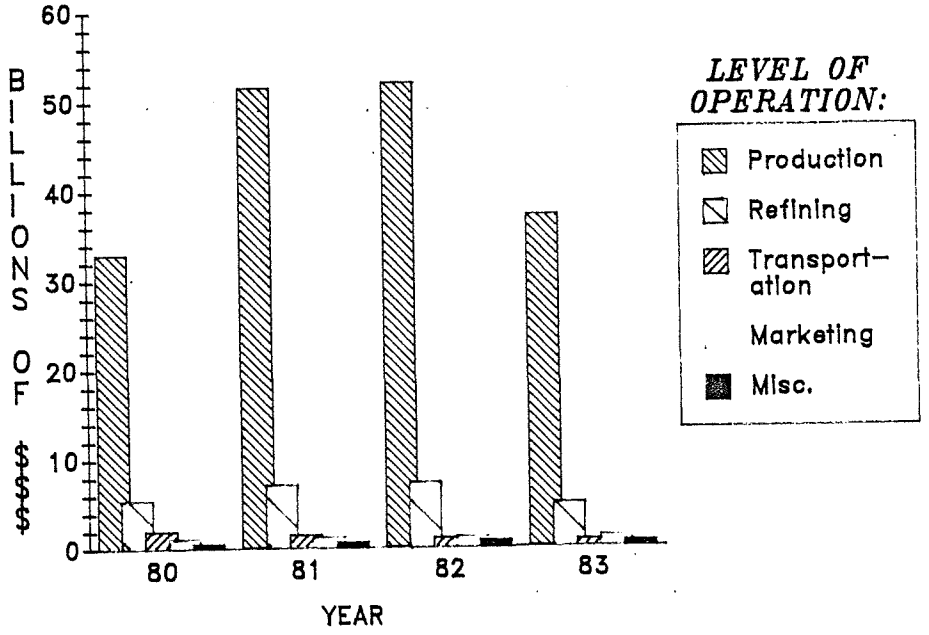
RELATIVE NET INCOME CONTRIBUTION
BY
DOMESTIC LINE OF BUSINESS

FRS Companies, 1981-83.[1]
(billions of dollars)

Year	Refining / Marketing	Pipelines	Production
1981	1.3 (6%)	1.8 (9%)	16.8 (85%)
1982	1.9 (10%)	2.3 (13%)	14.1 (77%)
1983	1.6 (10%)	2.0 (13%)	12.2 (77%)

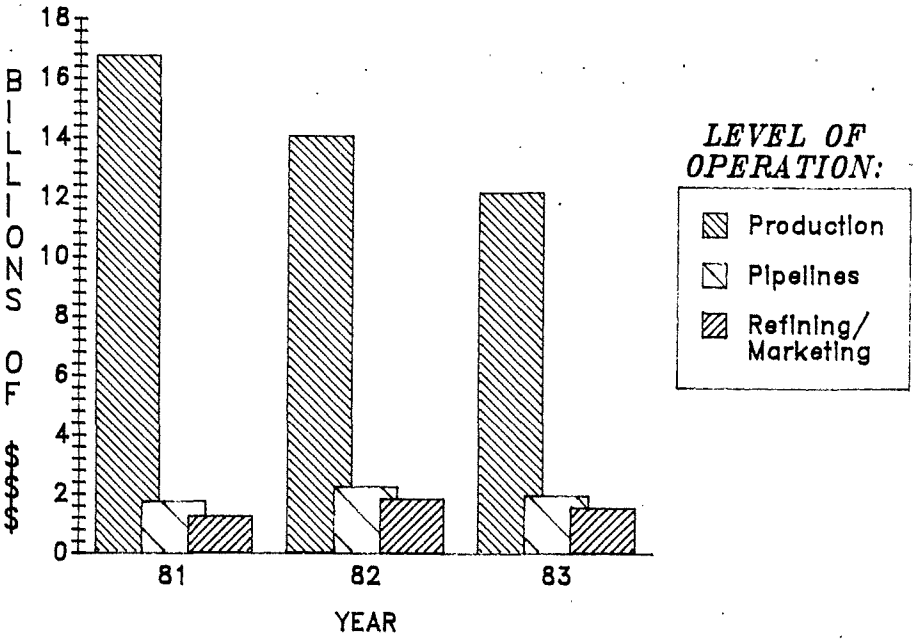
(SOURCE: Performance Profiles of Major Energy Producers 1983, DOE/EIA, February 1985, p. 48.

CAPITAL SPENDING



(SOURCE: Table p. 21.)

PROFITS



(SOURCE: Table p. 22)

There are many nettlesome problems with the data reported for this industry. These problems will be highlighted throughout this study. They will be discussed in detail in Appendix C. This problem is so pervasive, and often so subtle, that at the outset of this report we are emphasizing the need to scrutinize data sources.

The reported net earnings for the U.S. companies offer a good example to illustrate the problem and how this study will attempt to deal with similar problems. Data must be considered by orders of magnitude not to the furthest decimal place.

Comparing this DOE data, with the 1983 net income information previously reported for the top 19 U.S. Energy Corporations (Fortune Magazine), helps to cross-validate the accuracy of the numbers. Fortune Magazine reports 1983 net income of 18.9 billion for the top 19 companies versus DOE's reported 1983 net income for the 25 top companies of 15.8 billion. It is not likely that the additional six DOE companies included on DOE's list lost 3 billion dollars.

This discrepancy is not easily explained. But fortunately, it is not terribly significant for this particular point. Net profit of approximately the same magnitude (tens of billions) is being reported, despite a rather large, 15-20%, percentage difference. This confirmation in turn validates the relative magnitudes of the earnings contributed by the various industry levels previously cited. There is reasonable confidence in the conclusion that the retail marketing of gasoline contributes a very small amount to total industry profits.

B. *VERTICAL INTEGRATION IN THE PETROLEUM INDUSTRY.*

This first step in understanding the oil industry is to understand the nature of multinational vertically integrated firms that dominate this industry.* This is the style of business operation that began with Rockefeller's Standard Oil. Rockefeller used his refineries to control crude prices; similar to the way the railroads of the era controlled agricultural prices. As mentioned in the introduction, the industry has never shaken off the image that this structure is anticompetitive. This study attempted to determine if the industry's image is still deserved. Understanding vertical integration is the key to assessing the studies of competitiveness that have been performed to date.

Vertical integration can be the most efficient competitive structure for a firm, resulting in the lowest costs to consumers. It can also be a structure that is very efficient at controlling competition, resulting in higher costs to consumers. In either instance, it is an extremely difficult structure for policy makers to examine. It will be helpful to bear in mind that the key levels in a vertically integrated oil company are the refining operations and the crude and refined product transportation systems.

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* - A fully integrated firm is one that operates at all of the various levels in their industry; in this case, from getting oil out of the ground to putting gas in the car. A fully integrated oil company will own crude oil reserves, usually domestic and international. They will control or own the transportation method required to get the crude to the refinery, usually pipelines. They will own the refinery. They will own or control the transportation needed to get the products to the retail market, usually pipelines, barges or trucks. They will own or control retail outlets.

The U.S. petroleum industry remained vertically integrated after the breakup of the Standard Oil Trust in large part because each of the regional companies formed by the breakup were vertically integrated around their respective refineries. The only way for other companies to compete was to become vertically integrated themselves.

A 1950's study of the industry concluded as follows, and it is still true today:

> *Large, integrated units have gradually emerged as the predominant form of business organization in the oil industry ... It is particularly important to note that profit opportunities at the refining level of the industry, the central point in the oil process, have been extremely unstable, and that both forward and backward integration from the refining position have provided a very significant means by which greater stability could be secured. ... The causes of the variations in the profit opportunities have been of such a character that there has been little any individual firm could have done to gain protection from them except through vertical integration or through diversification into nonpetroleum activities.*[4]

The problems vertical integration creates for non-integrated firms in the oil business were succinctly described.

> *A second important structural feature of the (oil) industry is that all the major firms are vertically integrated. ... When firms are vertically integrated, one division of a company sells to another rather than purchasing its requirements on the open market. The transfer prices and hence gross margins at each level are set by managerial action rather than by market forces. The result is that the profit at any particular level can be manipulated as the logic of the integrated operation dictates. This fact heavily influences the marketing strategy of the integrated firms and raises havoc for the non-integrated refiners and the independent marketers.*[5]

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4. - *McLean, John G., and Haigh, Robert, Wm., The Growth of Integrated Oil Companies, (Norwood: Plimpton Press, 1954), pp. 663-4.*

5. - *op. cit. Allvine, et al, p. 10.*

Based upon the following analysis, one would expect to see one refiner as the price leader in each market.* All other major refiners would tend to follow the price leader.

> *... the petroleum industry (is) a vertically integrated oligopolistic industry ... The competitive strategy appropriate to such a market structure is relatively easy to predict. The major oil companies will generally refrain from price competition and exhibit leadership in establishing relatively high and stable prices. The economic theory of markets in which there are oligopolistic competitors accurately predicts that the prevailing gasoline price will be set at or near the price posted by one of the dominant sellers. Experience also shows that in any market consisting of a small number of dominant sellers, the implicit understanding that a price cut can and will be met by all other large sellers, effectively serves to deter frequent or aggressive price competition.*[6]

Vertical integration can be the most efficient way to operate for some firms, without necessarily allowing those firms to have a competitive advantage over other firms choosing to operate at only one level. To determine if vertical integration gives a firm competitive advantage, one must examine the industry within which it operates.

> *... If any level of the industry in not competitive, then it is possible for vertical integration to confer a strategic advantage on the vertically integrated firm.*[7]

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* - During our discussions with industry members, several sources told us there is one refiner in the Minnesota market that is the acknowledged price leader, Koch Refining.

6. - ibid., pp. 212-14.

7. - ibid., pp.211-15.

There really has never been a freely competitive market for crude oil, the base of the oil industry structure.* Generally firms with significant reserves enjoy a strategic advantage over those firms without. The unbranded independent retail gasoline dealer is at the greatest disadvantage. They are out at the end of the line when the crude level starts to crack the whip.

To illustrate how vertical integration and constrained market conditions in crude affect the oil business, consider the following example. Due to government intervention in the marketplace (the conservation measures started in the 1930's), there were incentives for integrated companies to claim their profits at the crude oil production level of operations. They could invoice their refineries for crude oil at prices that resulted in profits at the oil production level of operations.

> *... (this) shifting of industry profit from refining to the crude-oil department has quite naturally had a devastating impact on independent refining operations.* **From 1938 to 1970 the share of refining capacity accounted for by the twenty largest refiners had increased from 79.5 percent to 85.7 percent.** *... Most of the remaining 14.3 percent are now small integrated companies themselves. With the artificial inflation of crude-oil prices it became practically impossible to operate an independent refinery without the refinery producing a significant proportion of its own crude-oil requirements.*[8]

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* - On the one hand, the governments of the world will go to great lengths to directly and indirectly manage their supply of crude for national security reasons. On the other hand, there are individuals, companies and nations controling crude reserves who have demonstrated that their supply decisions can dramatically alter the market. The OPEC actions of the 1970's were an irrefutable example. The purposeful flood of OPEC oil currently, is having a destabilizing effect on the international economy and consequently international relations. A fact not lost on international policy makers or crude producers.

8. - ibid., p. 223.

There is one final, perhaps most important, point to understand about vertically integrated companies. In the real world, they can control or influence to a very significant degree the behavior of firms they do not appear to own or manage.

> *... defining integration in terms of financial and managerial control draws an unrealistically sharp line through what is really a continuum. One company may exercise great influence over an ancillary operation, may in a real sense actively participate in it, without legally controlling or directly engaging in it. To take the most obvious example, effective integration may be achieved by minority rather than majority stock ownership. There are other financial arrangements between legally separate firms that partake even more remotely of the character of ownership, yet create a kind of integration between them. Notable instances are the loans and grants refiner-producers make to prospectors or drilling contractors,* **and the leases by which refiner-marketers turn the operation of their bulk plants and service stations over to distributors and dealers--contracts characterized by a rich variety of rewards and commitments, written and unwritten.** *Finally, even contracts of supply, freely negotiated between distinct and independent business entities so far as formal appearances go, may in fact reflect and convey a close managerial control by one party over the other.* **Who controls whom and to what extent, in all such arrangements, depends on the relative freedom of choice and bargaining power of the opposing parties, something difficult to measure but impossible to ignore.**[9]

Decision makers must remain cognizant of the fact that so called independents may not necessarily be independent in this business. No data or statistic can substitute for informed judgement about the relative bargaining power of the various parties. An understanding of the historical and contemporary behavior of the dominant vertically integrated firms seems essential to the promulgation of sound public policy in the future.

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9. - op. cit., de Chazeau and Kahn, p. 20.

In summary, vertical integration has been the dominant firm structure in the petroleum industry since the 1920's. This has important implications for the operation of the industry. It is not possible to understand the retail level of the industry without remaining cognizant of the fact that the retail level is inextricably connected to the upstream operations of the industry.

As will be explained in the legal section, one's assessment of the efficacy of the state and federal fair competition laws is largely determined by ones perspective in the debate. There are those who say the time delays in obtaining a verdict preempt the dispensing of justice. For example, one recent petroleum industry federal antitrust case (The Bogosian Case) took 14 years to come to trial. In another example:

> *In 1973, the FTC filed a shared monopoly case against eight major oil companies charging a myriad of anticompetitive violations at all levels of petroleum distribution. ... The case was voluntarily dismissed by the Commission in 1981 as being outdated because of the changing structure of the petroleum industry.*[10]

Conversely, one could say that there are not very many successful actions brought in either state or federal courts, indicating that there are not many meritorious cases.

C. *Marketing Level Industry Standards*.

An understanding of the debates within the industry requires some familiarity with how the industry operates and converses. A simplified description of how the industry operates will be presented. A more detailed description of industry terms can be found in the glossary, Appendix E.

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10. - (see Appendix A, p. A-14.

This section is divided by three subheadings. The first will deal generically with the common jargon and business styles. The second will introduce Minnesota business styles. The final section will discuss rent and product pricing.

i. Generic Jargon and Business Styles.

At the retail level of the business, gasoline operations are popularly described by terms that contain information about three distinct qualities of the business; franchise status, type of ownership/control and level of operation, e.g. refiner's branded company-op. Franchise status has only two categories, franchised and not franchised; known respectively in the business as branded and unbranded. Type of ownership/control is broken into three types; independent, leased, and company-ops. Level of operation is broken into three levels by major types of operations (dealer, wholesaler, refiner).

There are basically two types of products sold by gas stations. Branded products, generally household name-brand gasolines such as Phillips or Amoco, and unbranded products, products with no popularly known or promoted name brand such as Fast Gas or Town's Edge Gas. The distinguishing characteristic is that branded products are promoted on a regional or national basis. They come to the public with a reputation. The public consumes them based upon certain expectations. They are brand names that are sold under franchise. Branded stations generally retail products of the ten or fifteen largest vertically integrated refiners. They usually have their own credit card, though this is less true today than in recent years.

Unbranded gas is generally sold on the basis of price to people who believe that gas is gas. It is important to note that some refiners regularly sell branded product to wholesalers with the agreement that it be re-sold at retail as an unbranded gasoline, e.g. Texaco gasoline sold at retail as No Name Gas.

There are several different types of gas station ownership/control (henceforth referred to as control). They are referred to as leased, independent or company operated. In the industry, branding is usually an additional descriptor term used as a prefix to the term for type of control, e.g. branded lessee.

The most common type of gas station control is a branded lessee. In this type of operation, someone other than the gas station operator owns everything. A major oil company generally owns the brand name for the products and franchises the right to sell those products to the operator. Generally that same major oil company, but sometimes a third party, owns the real estate, pumps and equipment. The operator leases the entire physical plant. Lessees need not be branded, but usually are.

The second typical control form is the independent gas station. In this case, the operator usually owns the physical plant and sells unbranded products. This is the type of operation stereotypically known only as Town's Edge Gas. Independents are arbitragers who operate by buying the lowest wholesale cost gasoline available in the region then re-selling that gasoline for the lowest retail price around. They are usually part of a larger wholesale operation.

The third typical control form is generally known as the company-op. This type of operation is just as it sounds, the parent company owns and operates the retail station. Note, the term company-op is ambiguous because it does not indicate if the the parent firm is a wholesaler, an independent refiner or a major vertically integrated refiner.

The figure on the next page illustrates the various distribution levels and channels. Refiners sit atop the pyramid. Wholesalers frequently develop their own smaller pyramids. Retailers form the foundation row.

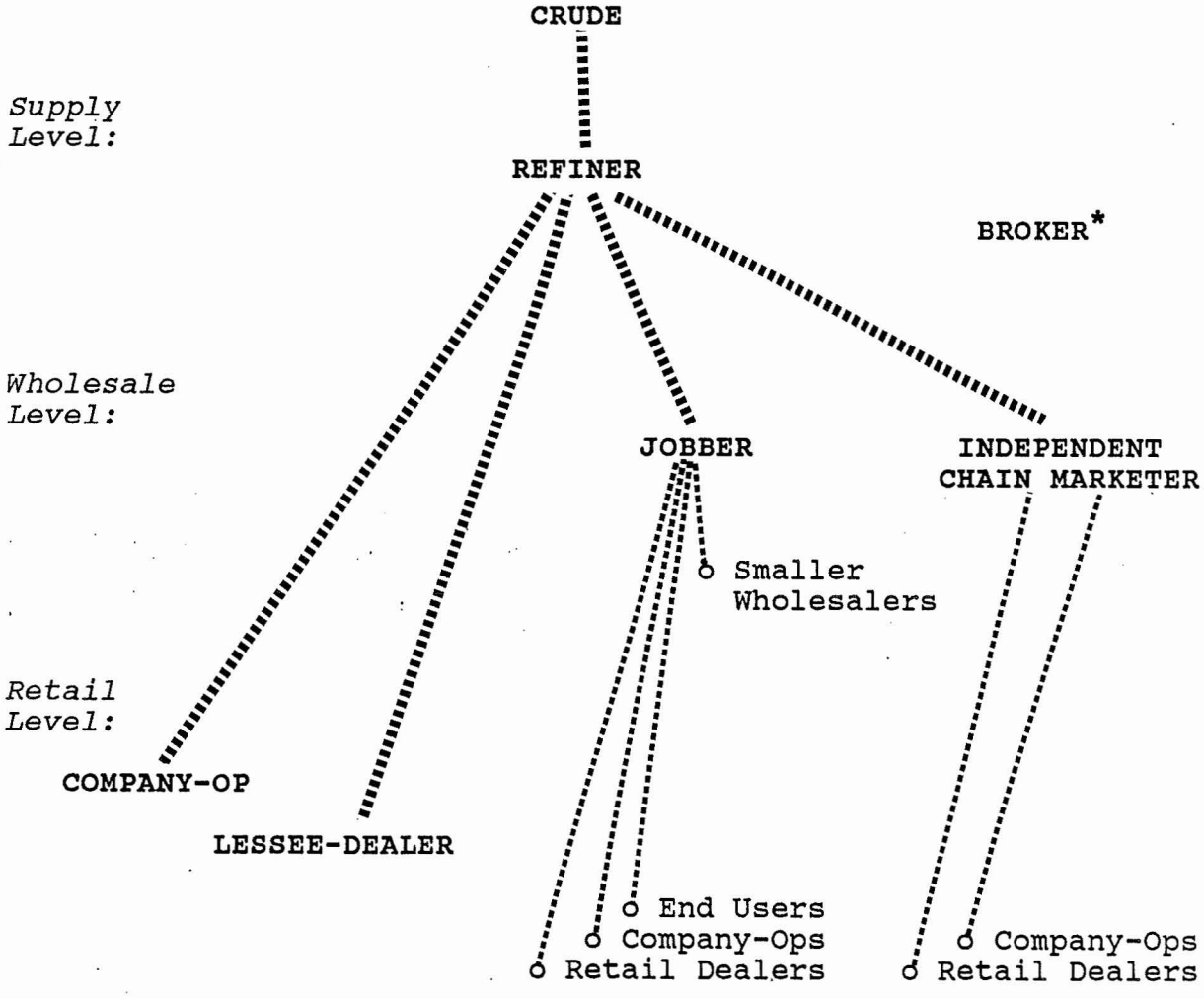
Note that refiners can go directly to retail or use the indirect wholesale channels. As the figure indicates, jobbers and distributors can directly control retail outlets.

There are brokers of refined products at the marketing level in most regional markets. They tend to operate in a manner analogous to the national and international spot markets for crude. They generally do not handle a significant percentage of the volume. An example of a brokered deal would be a transport sized load of unbranded gasoline purchased in Omaha and resold in Rochester as a one time deal.

For simplicity, this chart does not illustrate how branding operates. The refiner actually sits at the apex of two parallel distribution systems, one with branded product distribution channels and one with unbranded product distribution channels. Because of franchise and leasing arrangements, refiners have some unspecified but undeniable level of control of retail dealers even when supplied through the indirect distribution channels. (See page 29.)

In summary, it is the refiner level of the industry that is the bottle-neck. The large numbers of marketers with their diverse styles of marketing are dependent upon a handful of refiners for product to sell. Refiners sell product directly through their company-ops and lessee-dealers. They also sell product indirectly through the wholesale market; jobbers and distributors.

MINNESOTA GASOLINE DISTRIBUTION CHANNELS



* - *[Brokers can sell to any or all entities; tend towards wholesale deals. Execute regular and one time deals.]*

ii. Minnesota Illustrations.

The predominant forms of marketing in Minnesota will be described. Bear in mind that there are theoretically an infinite number of permutations of these forms. The description will proceed from the refiner level permutations downstream to the retail configurations. (In this industry, retail operations are referred to as being downstream from refining. Conversely, refining is upstream from distribution.)

At the refiner level, there are two separate channels of distribution. There is generally one for their branded products and another for their unbranded products. Some refiners engage in direct distribution of their products to retail outlets. Others indirectly distribute through wholesalers who are in effect local subcontractors.

Refiners select their particular mix of distribution styles based upon capital allocation decisions and managerial styles. Do they want to purchase gasoline transport trucks or drilling equipment? Can they run a more efficient distribution business from the main office or by using local subcontractors? (See pages 92-93.)

Minnesota examples might help to illustrate this. Ashland directly supplies its stores (company-ops) with branded product (Super America) using common carriers, e.g. Indianhead. Amoco likewise directly distributes most of its own product to its retail network of lessee-dealers. Phillips, on the other hand, generally uses an indirect distribution system. They use a system of wholesalers; in effect subcontractors. Phillip's control after the product leaves the terminal is the

franchise that goes with their branded products through their indirect distribution system.

In the Minnesota market, there are three local refiners (Koch, Ashland and Murphy). Together, with Amoco, they supply eighty to ninety percent of the gasoline sold in Minnesota. Their main competition comes from the Williams pipeline. Williams can supply both branded and unbranded product, from mid-continent and gulf coast refiners. For a more detailed discussion see the section on supply, pages 54-56.

It is useful to understand how Koch Refining operates. Koch has the largest refining capacity in Minnesota and is currently increasing their capacity. Koch is reportedly the price leader for this market. Koch refining has no retail outlets or distribution operations in Minnesota. Many of the major branded refiners purchase (or use exchange agreements to obtain)* their branded product from Koch in St. Paul for distribution in this region. This part of their operation is essentially a contract refining business. Koch also sells unbranded product through the independent's distribution system. Some independents contract with Koch for unbranded product.

(It should be noted that Koch has other refineries, has retail and distribution outlets and has some crude reserves. They currently are producing crude from wells off the coast of California in cooperation with Mobil.)

Wholesale businesses are the next level of operation for discussion. Nationally, somewhere between a third and two

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* It was beyond the scope of this study to analyze exchange agreements. However, it is our opinion that they offer a particularily convenient mechanism for tacit cooperation between the major firms and warrant further study.

thirds of all product is distributed by wholesalers. As the diagram indicates (page 34), jobbers may operate entirely at the wholesale level or may operate a network of company-op's or lessee-dealer retail ouitlets. It is traditionally jobbers who have operated the independent retail chains.

It is important to remember that there are petroleum products other than gasoline. This is especially important at the wholesale level, where fuel oil is an important factor in the structure of operations. Likewise, groceries and bulk lubrication products are common products in the jobbers business lines. Many wholesalers and retailers make little or no profit on their cash price self service gas products. However, it is beyond the scope of this study to discuss these extended product lines other than to note that the reader must remain cognizant of their existence and importance.

In Minnesota, several major integrated firms (Phillips, Texaco, Union 76, Conoco, Shell, and Mobil) distribute product to their branded dealers largely through wholesalers rather than directly distributing product themselves. Wholesalers of these branded products generally have the choice of purchasing these brand name products from Koch refining or from the Williams pipeline. Occasionally they might purchase from a broker or from out of state. In the last few years, jobbers have increasingly sought out multiple sources of supply for product. (See page 99).

In general, the distribution system is a function of population. The more population density decreases, the further downstream in the distribution channel an operation is apt to be

located. The following very gross generalizations help to illustrate. Refiner company-ops tend to be located in high density urban areas. Distributor's tend to be in suburban areas. Jobbers tend to be in non-metro areas. Lessee-dealers served by a wholesaler's wholesaler would tend to be located in rural areas.

It is at this wholesale level that most independent gasoline businesses tend to operate. For example, Q Petroleum, an independent metro area business, would be described as an unbranded multi-source distributor who markets largely through company-ops. They obtain product from a variety of sources, i.e. refiners and brokers. They operate a number of retail company stores marketing under their own brand name. They are called retail chain marketers. (See diagram page 34.)

Multi-sourcing is a concept that warrants further explanation. Before the 1970's, wholesalers generally relied on a single refiner for product. One effect of the shortages in the 1970's was to force wholesalers to establish relationships with additional suppliers. Deregulation in 1981 was followed by regional pull-outs by major refiners, e.g. Shell left Minnesota. It is now the rule rather than the exception for wholesalers to have multiple sources for product, thus minimizing dependence on a single supplier. This is known as multi-sourcing. In Minnesota wholesalers will go as far as Wisconson and Nebraska with transport trucks to obtain product at the lowest priced source.

At the retail marketing level there are predominantly three types of businesses; branded lessee-dealers, branded company

stores and unbranded independent stores. Branded lessee-dealers essentially rent their entire operation. They tend to operate in lower volume, generally more rural, markets. Company-ops tend to be owned by either the refiners or relatively large distributors. They tend to operate in high volume markets. Unbranded independent stores characteristically are difficult to characterize. They tend to be jobber or distributor owned and operated. The key point to retain is that they represent a very small segment of any market.

In Minnesota, Amoco has the largest number of retail outlets. They operate almost exclusively through a network of branded lessee-dealers. Most of these are traditional service stations, some are high volume pumper stations. Amoco is a fully integrated company.

Ashland Oil, marketing under the brand name of SuperAmerica, is reported to be the next largest retailer. Ashland markets through high volume convenience store company-ops. (In the convenience store style of marketing, it is possible for gasoline to be a loss leader.) Ashland is only integrated downstream from their refinery; having no crude reserves.

Many of the major vertically integrated refiners have branded retail outlets in Minnesota. (See page 91.) Note, most of these refiners contract with Koch to refine the gasoline they will sell under their brand name through their retail dealers in Minnesota. Most of these operate some mixture of high volume refiner supplied company-ops and lower volume lessee-dealer service stations. These outlets are selling major name branded gasoline that was refined by Koch from crude obtained in the

market. Thus, most of the major integrated refiners are operating only at the marketing level in Minnesota.

There are several independents operating in Minnesota. These tend to be wholesalers who operate a chain of retail outlets, usually as company-ops.

Lastly, there are several co-ops in Minnesota. While they represent a unique marketing style, due to their small marketshare they will not be discussed in detail in this study.

iii. Rent and Product Pricing Issues.

This next section will present an introduction to the issues that are at the heart of the debates in this industry. Dealers have raised questions about the wholesale pricing of gasoline. They have raised questions about the rent charged to lessee-dealers. This section will introduce these issues. Rent pricing will be discussed first.

There has been a major change in rental practices in recent years. In the past, virtually all rent was charged in the wholesale price of the product. Increasingly in the last few years, rents have been unbundled from the product price and now tend to be explicitly articulated in contracts. This has resulted in charges that the new rents are exorbitant.

True rent costs cover a wide range of items in this industry. Retail service stations frequently rent plant and equipment. Branded dealers must also pay rent for their product franchise. Product transportation and storage costs must also be accounted for. Note, these dealers generally finance their own repair businesses, including inventory costs.

Historically, lessee-dealers were charged a single price product, known as the dealer tank wagon price (DTW). All the

various rents were bundled into this single price. Each dealer would pay a different DTW price, customized to their particular rental package. It was extremely difficult to compare these so called wholesale prices due the bundled rent charges.

The changes in the rent pricing system has resulted in change in the product pricing system. For a discussion of current pricing systems, see page 89.

However, it is important to understand that refiners do not charge their lessee-dealers a rent based upon the true value of the property the gas station is built on. Consider the following excerpts from the section in the DOE draft study entitled, "The Myth of the Economic Rent:"

> *Much has been made in the trade press that refiners are charging an "economic" rent rather than collecting rents on a volume basis. The economic rent is a myth. Refiners have not and probably never will collect a true economic rent.*
>
> *A real economic rent is one that seeks to recover the occupancy costs of the station (real estate taxes, maintenance), the capital costs of the station (interest on borrowed capital), and the opportunity costs of an alternate use of the location. ... The refiner never has set the rent level based upon these components.*
>
> *... If the refiner attempts to set the rent at the opportunity cost, why would the dealer stay in the location? The rent would be so high that the dealer would not be any better off as a dealer than as an employee. ... The important point here is that rents are based upon the value of the dealer to the refiner.*[11]

Finally, there are several aspects of the branded lessee-dealer retailing style that are important to understand. The branded lessee-dealer operates a business that is not easily moved if the terms of the new lease are unfavorable. Gas station clientele tends to be loyal to the location not the

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11. - DOE draft report; p. 61.

operator. Likewise, in many cases, it is difficult to obtain branded product from a different supplier if the lessor's product price is unfavorable. In many markets, the dealer's supplier operates a retail outlet (company-op) that competes directly with the lessee-dealer.*

Analysis of the existing business practices lead us to conclude that the gasoline businesses of the branded lessee-dealers exist at the discretion of the lessor. (See discussion re: control conferred by vertical integration, p. 29.) This is not a new situation. It has existed since the 1930's. The refiners/suppliers invest capital for land, buildings and pumps. The lessee-dealers invest little or no capital in the gasoline business, but generally must finance inventory and their repair business equipment if any. They will eternally disagree about who is receiving a fair rate of return on their investment. The vertically integrated refiners will subsidize their lessee-dealer's rents as long as they feel it is a good investment. Without subsidized rents, the lessee's apparently would have no economic reason for operating a service station.#

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* - Note: This also illustrates the supplier control of retail pricing. The supplier directly sets the retail price at the company-op and indirectly controls it at the lessee's store. From the 1930's until the 1970's, state Fair Trade laws allowed franchisors to suggest retail prices to franchisees. From 1972 until 1981, government regulations dictated prices. Only since 1981, have franchisors been prohibited from discussing retail price with franchisees.

- (See the legal section for a summary of government interventions into this integrated refiner/lessee-dealer relationship; see in particular the Petroleum Marketing Practices Act (PMPA), Appendix A, p. 28-32. Note that the PMPA does not make provisions for mediating the rent clause in new leases.)

III. REFINERS AND SUPPLIERS SERVING MINNESOTA

An understanding of the petroleum marketing industry in Minnesota requires an understanding of Midwest refineries and the petroleum product supply industry. The ownership and location of refineries explains the presence of some petroleum companies in Minnesota and the options available to their competitors. The overall competitiveness of the local industry and the level of retail prices depends, in part, on these sources of supply.

To understand the nature of the overall supply industry, it is important to recognize that two very closely related stages of the petroleum industry are engaged in supplying motor gasoline. The first stage, which this chapter will refer to as the refining industry, consists of companies that own refineries with reasonably close access to local markets. The second stage, which this chapter will refer to as the supply industry, includes all companies that supply gasoline to local distribution terminals for resale.

Many supply industry companies in Minnesota do not operate nearby refineries and acquire most of their motor gasoline from Minnesota area refineries instead. These supply arrangements are typically referred to as "exchange agreements" because they often involve agreements between petroleum companies to exchange product from refineries in different parts of the country. Exchanges reduce shipping costs and enable the exchanging companies to market gasoline in areas of the country not served by their own refineries.

A. *Refineries Serving Minnesota.*

The refineries serving Minnesota can be divided into three general groups, including: 1) three local refineries operated by Ashland Oil, Koch Refining and Murphy Oil; 2) Amoco Oil Company, which ships products into the state through its own pipeline; and 3) refineries located in Oklahoma and Kansas (and also further south) that can ship products via the Williams Pipeline to Minnesota. Canadian gasoline imports and barge shipments up the Mississippi are two other much less significant supply sources.

Including exchange agreements, Minnesota's local refiners provided roughly two-thirds of all gasoline supplied in the state in 1984.[1] Amoco and refineries with access to Minnesota via the Williams Pipeline account for essentially all of the remaining third of gasoline supplies.

i. Local Refineries.

As these percentages suggest, the three local refineries produce most of the motor gasoline consumed in Minnesota. They are also important sources of supply for southwestern Wisconsin, eastern North Dakota and, to a lesser extent, northern Iowa and eastern South Dakota. In 1984 their total gasoline output was 1.85 billion gallons.[2] By comparison, gasoline consumption in Minnesota was 1.94 billion gallons.[3] Koch, Ashland and Murphy all supply gasoline directly to distributors or their own marketing operations, and they also provide most of the gasoline sold by other supply companies in Minnesota.

Koch Refining is considered the largest source of motor gasoline in Minnesota. Supply data on individual companies is not available for publication. However, since Koch's share of local refinery capacity is 56 percent and local refineries produce two-thirds of all gasoline sold in Minnesota, it would be reasonable to assume that Koch Refining produces at least 30 percent of state gasoline supplies.[4]

The Koch, Ashland and Murphy refineries currently receive crude oil supplies almost entirely via pipeline from Canada and North Dakota (see Table R-1, p. 47). Koch Refining, in particular, is equipped to process increasingly available supplies of heavy crude oil produced in Saskatchewan and Alberta. Heavy crude oil contains a high proportion of residual fuel oil, which requires additional processing to be converted into gasoline and other lighter petroleum products. None of the three refineries owns substantial crude oil reserves in North Dakota and Canada. Instead, they must purchase their supplies from producers.

Figure R-1, p. 46, displays the routes of crude oil pipelines serving the three local refineries. The Lakehead/Interprovincial Pipeline extends from Alberta, Canada through Minnesota to refineries in Illinois, Michigan and eastern Canada. The Minnesota Pipeline transports crude oil to the Koch and Ashland refineries from the Lakehead Pipeline and the Portal Pipeline, which originates in western North Dakota. The Koch and Ashland refineries can also receive domestic and foreign crude oil shipments from the south via the Wood River

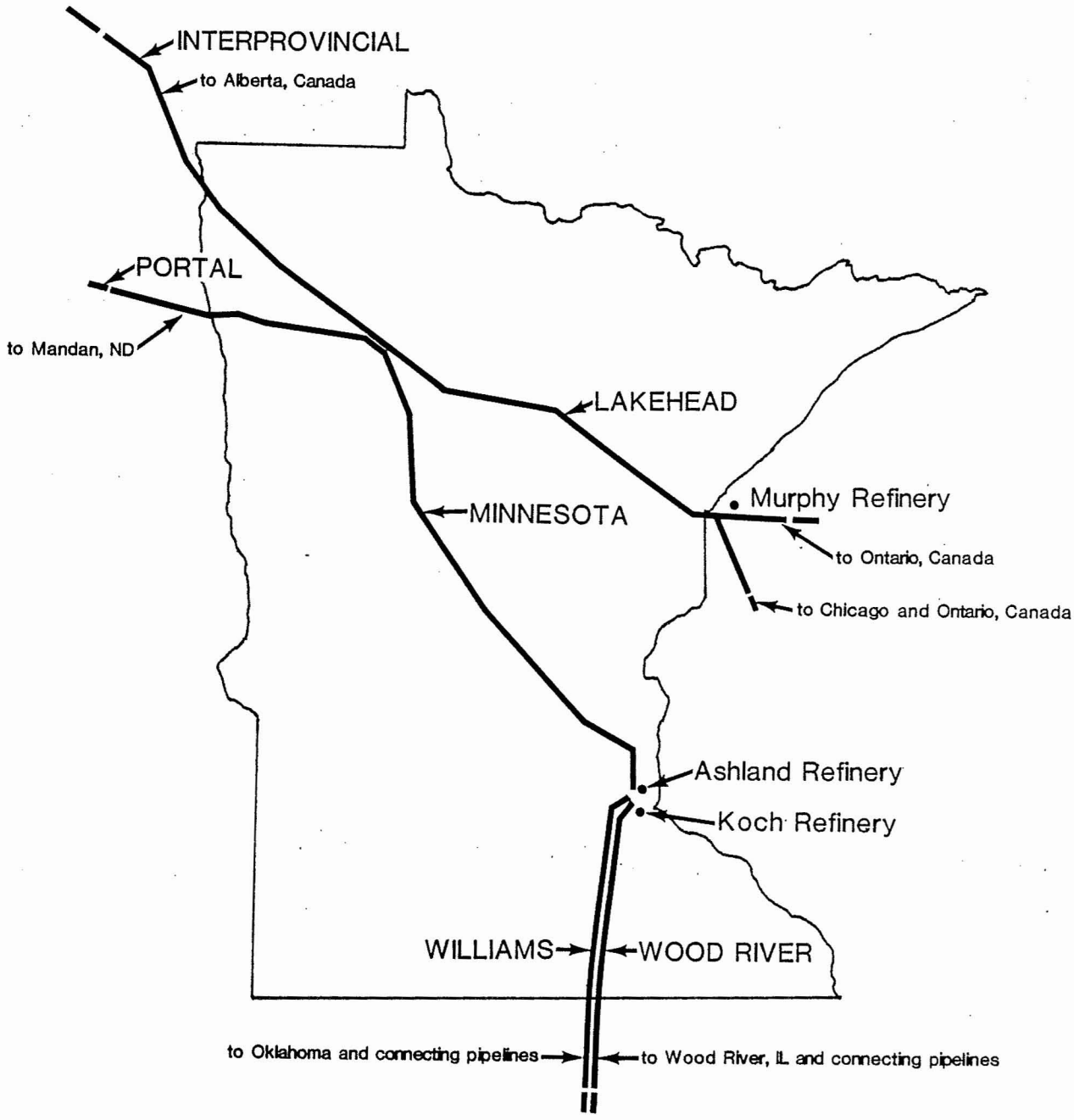


Figure R-1

Crude Oil Pipelines in Minnesota

SOURCE: Minnesota Department of Energy and Economic Development, Policy Analysis Division

TABLE R-1

REFINING CAPACITY AND CRUDE OIL SOURCES OF MINNESOTA AREA REFINERIES

Refinery Capacities, January 1, 1985

OWNER	LOCATION	CRUDE CAPACITY (barrels/day)
Koch Refining Company	*Pine Bend*	*137,000*
Ashland Oil Company	*St. Paul Park*	*67,000*
Murphy Oil Company	*Superior, WI.*	*39,000*
Total		243,000

1984 Crude Oil Supply Sources

SOURCE	BARRELS/DAY	PERCENT
Canada	*150,000*	*66*
North Dakota	*60,000*	*27*
Other Domestic	*10,000*	*5*
Other Foreign Imports	*3,000*	*2*
Total	230,000	100

SOURCE: U.S. DOE, Petroleum Supply Annual, 1984, pp. 92, 98. Minnesota Department of Energy and Economic Development, Policy Analysis Division.

Pipeline and, to a limited extent, the Williams Pipeline. These two southern sources accounted for only seven percent of local crude oil supplies in 1984.

ii. Amoco Supply Sources.

Amoco Oil Company serves Minnesota through a dedicated pipeline operated by a wholly owned subsidiary. The pipeline ships petroleum products into Minnesota from an Amoco refinery in Mandan, North Dakota and a second Amoco refinery in Whiting, Indiana. The segment of the pipeline located in Minnesota supplies four distribution terminals owned by Amoco.

The Mandan Refinery is served by a single crude oil pipeline originating in North Dakota, but the Whiting, Indiana refinery has access by pipeline to many domestic and foreign crude oil sources. The two refineries may rely, in large part, on crude oil that Amoco owns and produces. Including foreign production, the company produces roughly the same amount of crude oil that it refiners.[5]

iii. Pipeline Shipments from Midcontinent Refineries.

Midcontinent refineries located in Oklahoma and Kansas ship gasoline supplies to Minnesota via a common carrier pipeline system operated by the Williams Companies. Because they face higher shipping costs locally than Minnesota area refineries, these midcontinent refineries serve as a secondary source of supply. The pipeline tariff (transportation charge) from Kansas and Oklahoma to Minnesota terminals costs suppliers 3 to 3.5 cents per gallon.

Nevertheless, midcontinent refineries are an important source of competition and play an ongoing role in meeting local supply needs. There are twelve active refineries in Oklahoma and Kansas with a total operating capacity of 711,000 barrels per day, three times the combined capacity of the Koch, Ashland and Murphy refineries.[6] Most of the twelve refineries produce at least some of the motor gasoline supplied to Minnesota.

No data is available on specific crude oil sources for midcontinent refineries, but midwestern refineries in general receive 82 percent of their crude supplies from domestic sources.[7] Midcontinent refineries would rely primarily on nearby crude oil production in Oklahoma, Kansas and Texas.

The Williams pipeline system also receives gasoline shipments from Gulf coast refineries in Texas and Louisiana via the Explorer Pipeline. The Gulf coast is the largest refining center in the U.S. with a total operating capacity of 5,829,000 barrels per day, 24 times the capacity of the Minnesota area refineries.[8] Shipping costs keep this source from supplying a significant component of Minnesota gasoline sales, but the pipeline link mitigates variations in prices and supplies between Minnesota and the rest of the country.

iv. Other Supply Sources.

Two additional sources supply a very small portion of motor gasoline to Minnesota, and are not likely to become significant supply sources in the near future. First, distributors in northwest Minnesota can transport gasoline by truck from a terminal in Winnipeg, Manitoba if price differences justify the

additional transportation costs. In 1984 Canadian imports accounted for 0.6 percent of Minnesota gasoline supplies.[9] Suppliers can also ship petroleum products by barge up the Mississippi River during the eight months of the year that the river is not ice covered. Supply sources and shipping costs do not generally make this an attractive option. The Army Corps of Engineers reported 151 million gallons of gasoline barged into Minnesota in 1983; less than one percent of annual consumption.

v. The Minnesota Petroleum Product Distribution System.

The map in Figure R-2, p. 51, summarizes the location of the refineries and petroleum product pipelines in Minnesota. The figure also identifies the location of distribution terminals in the state.

As the map shows, two segments of the Williams Pipeline enter Minnesota from the south. These segments link Minnesota with midcontinent refiners and also permit local refineries to supply states to the south.

The pipeline segments within Minnesota move petroleum products to terminals that supply transport trucks for further distribution. The Williams Brothers Pipe Line Company operates seven terminals that serve as principal supply sources of gasoline and distillate fuel for distributors in Minnesota. In addition, Koch, Ashland and Murphy operate terminals at their refineries. The remaining terminals shown in Figure R-2 are all supplied by pipeline and are operated by Amoco, Conoco, Koch, Mobil, Phillips, Texaco, and Unocal (Union).

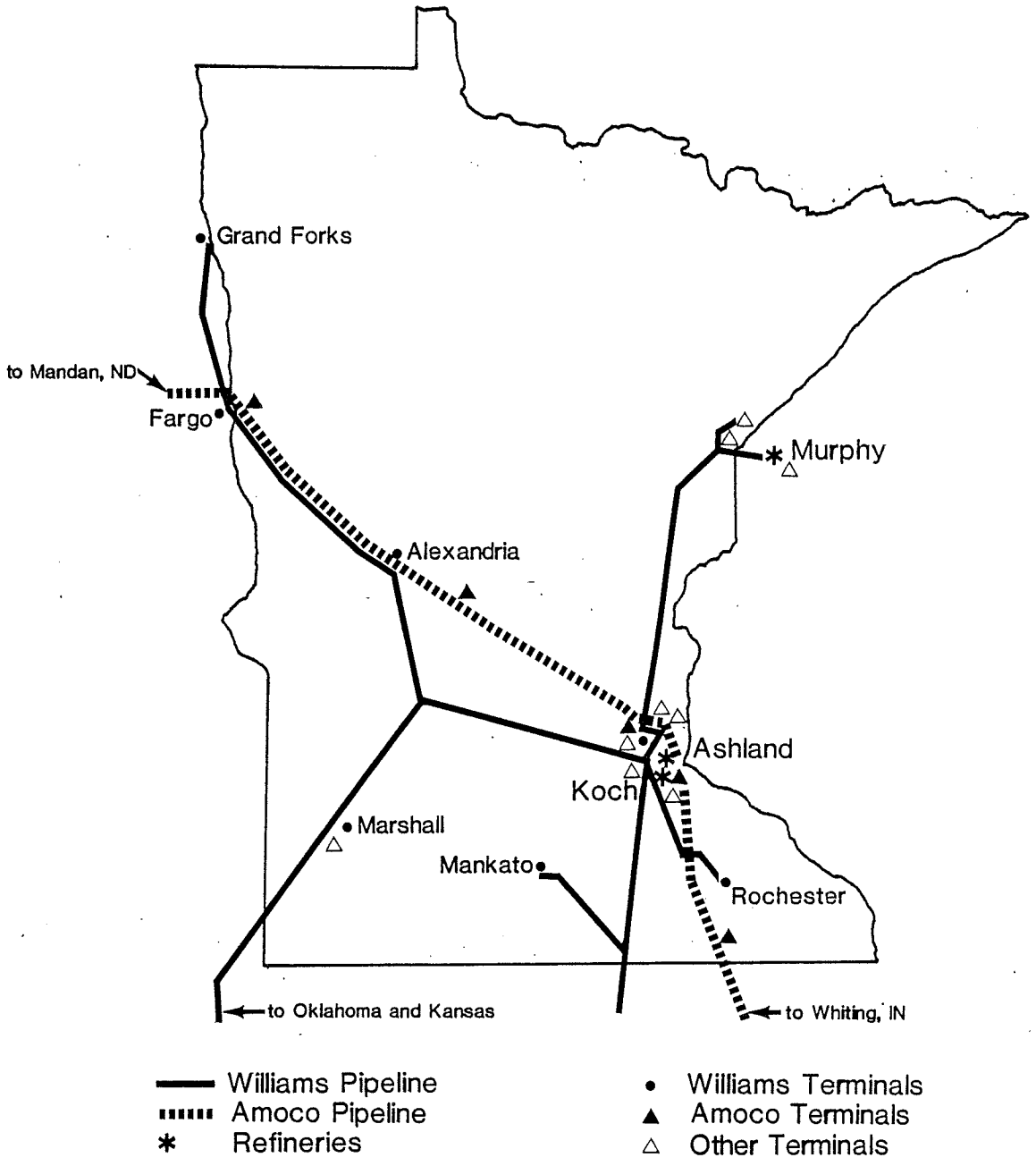


Figure R-2

Petroleum Product Pipelines and Terminals in Minnesota[1]

SOURCE: Minnesota Department of Energy and Economic Development, Policy Analysis Division

[1]Crude oil and propane pipelines are not shown

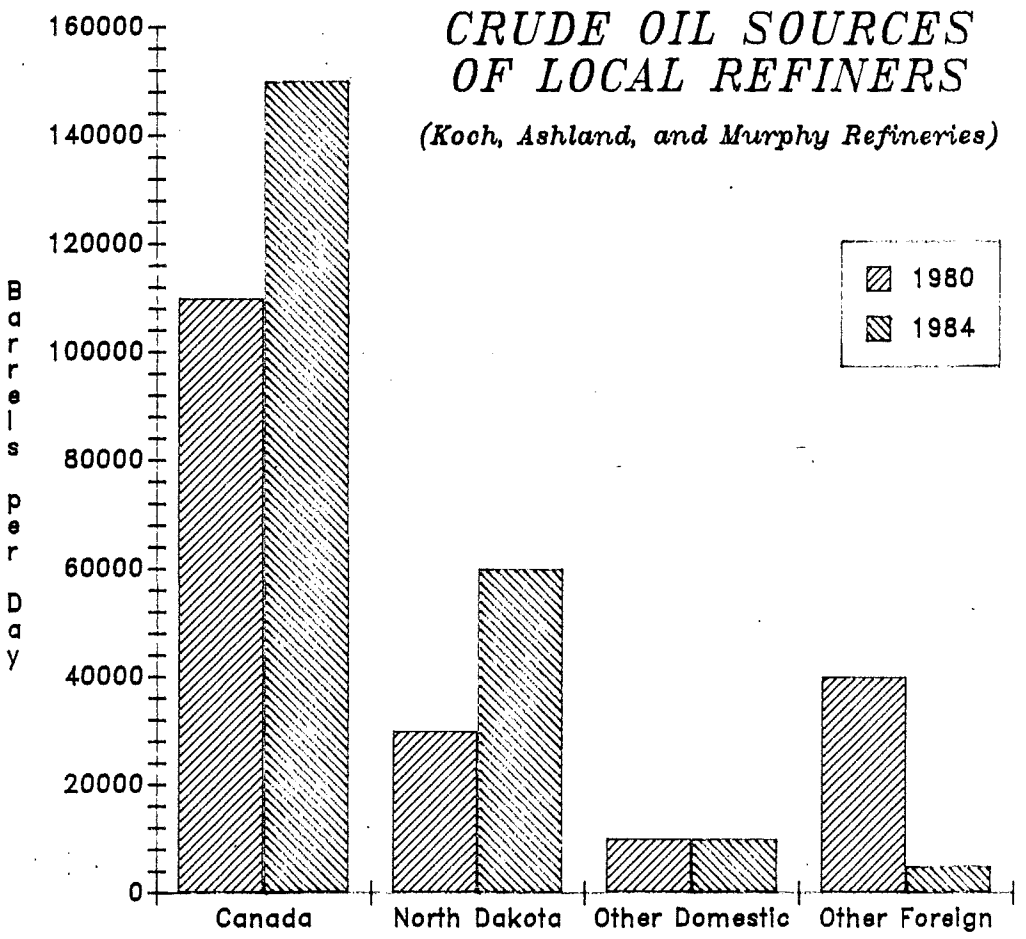
vi. Summary of Crude Oil Supply Sources.

When the many sources of crude oil are taken into account, the prominence of the three local refineries establishes Canada as largest ultimate source of crude oil and North Dakota as the second largest crude oil source for gasoline consumed in Minnesota. Other domestic crude oil sources are also important, but foreign sources other than Canada are a very small share of the total. The breakdown for 1984 was roughly as follows:

Canada	45 percent
North Dakota	25-30 percent
Other domestic sources	20-25 percent
Other foreign sources	1-5 percent[10]

The United States has a much different overall mix than Minnesota. In 1984 domestic sources account for 70 percent of all U.S. crude oil and petroleum products. Only three percent of total U.S. supplies come from Canada while other foreign sources account for 27 percent of the total.[11]

FIGURE R-5



SOURCE: Minnesota Department of Energy and Economic Development, Policy Analysis Division

B. *Supply Companies Serving Minnesota.*

The next stage downstream from refining is supplying products at distribution terminals. At this stage, suppliers engage in one or more of three levels of involvement with the distribution and retail sale of gasoline. A supply company can directly distribute its own gasoline products to retail outlets that market under the supplier's brand name. The second approach is to supply branded jobbers who distribute the gasoline to retail outlets operating under the supplier's brand.

As a third option, a supply company may elect to not maintain a brand name. This makes it possible to supply any distributor and maintain only very limited contract relationships. The various arrangements companies use to distribute and market the gasoline they supply at terminals are discussed in more detail in other chapters of the report.

Because they operate nearby refineries, Koch, Ashland, Murphy and Amoco as a group include the largest supply companies in Minnesota. In 1984 they supplied 55 percent of the gasoline distributed in the state (not including their arrangements with other supply companies).[12] Each of these companies emphasizes a different combination of the three general options for marketing gasoline. While Koch engages in no distribution or retail sales of branded gasoline, it is a principal source of unbranded gasoline for jobbers that distribute supplies to unbranded retail outlets. Ashland supplies the retail outlets of its SuperAmerica subsidiary, probably the largest chain store gasoline retailer in Minnesota, and also supplies unbranded

distributors. Murphy distributes gasoline to a network of retail outlets under the Spur brand name. Amoco distributes to retail outlets in Minnesota under the Amoco brand name, both as a direct distributor and through affiliated jobbers.

According to data published by Lundberg Survey, Inc. five companies in addition to Amoco and Ashland distributed more than three percent of Minnesota's gasoline supplies in 1984, either directly or through affiliated jobbers. The companies include Conoco, Mobil, Phillips, Texaco and Unocal. They are all major oil companies that, like Amoco, use a combination of direct distribution and jobbers to distribute gasoline to a large network of branded retail outlets. In 1984 these five companies supplied 25 percent of gasoline sales in Minnesota.[13]

The remaining eight suppliers, with over one percent of the market include most of the companies that operate refineries in Oklahoma and Kansas (see Table R-2, p. 56.) Two farm cooperatives, Cenex and Land O'Lakes are headquartered in Minnesota and own shares of a refinery in McPherson, Kansas that is operated by the National Cooperative Refinery Association (NCRA). Farmland Industries is a third cooperative that supplies gasoline in Minnesota. It operates two smaller refineries in Kansas and also owns a share of the NCRA refinery. These cooperatives have a strong marketing presence in rural areas of Minnesota and other states.

Minnesota suppliers without nearby refineries acquire most of their gasoline from the three local refineries and Amoco. Their additional needs are met by supply arrangements with

TABLE R-2

MIDCONTINENT REFINERIES, JANUARY 1, 1985

REFINERY	LOCATION	CRUDE CAPACITY (barrels/day)
Kansas		
Derby Refining	*Wichita*	*28,800*
Farmland Industries	*Coffeyville*	*56,500*
	Phillipsburg	*26,400*
National Cooperative Refinery Asc.	*McPherson*	*70,000*
Pester Refining	*El Dorado*	*33,250*
Texaco	*El Dorado*	*80,000*
Total Petroleum	*Arkansas City*	*42,500*
TOTAL		*337,450*
Oklahoma		
Conoco	*Ponca City*	*134,000*
Kerr-McGee	*Wynnewood*	*43,000*
Sinclair Oil	*Tulsa*	*50,000*
Sun	*Tulsa*	*85,000*
Total Petroleum	*Ardmore*	*62,000*
TOTAL		*374,000*

SOURCE: U.S. DOE, "Petroleum Supply Annual, 1984," pp. 90, 94.

midcontinent refineries or, for many of the companies, their own midcontinent refineries. Supply companies also make frequent spot purchases (one time purchases from refineries or other sources), and if the price difference is great enough, supplies from the Gulf coast can reach Minnesota.

C. *Wholesale Gasoline Prices*.

An important question to ask about the petroleum supply industry in Minnesota is whether the supply sources are diverse

enough for local gasoline prices to be competitive. A review of wholesale gasoline prices suggests that the pipeline links to midcontinent refineries and the Gulf coast do, in fact, provide sufficient competitive pressure to keep local gasoline prices in line with the rest of the country. Wholesale price data at the state level are available from the U.S. Department of Energy. The data can be adjusted to include only prices paid by jobbers at terminals so that it is possible to compare price levels of different states. According to these estimates, the average jobber buying price of leaded regular gasoline in Minnesota during 1983 and 1984 was 3 cents per gallon greater than the U.S. average, and the price difference for unleaded regular was 2 cents.[14]

Comparing average jobber buying prices for Minnesota with nearby states reveals that price differences correspond to the cost of shipping petroleum products north and east from Kansas and Oklahoma. As Figure R-3 illustrates, the average price of leaded and unleaded regular gasoline rises steadily for states north of Kansas until reaching a difference of 3.1 to 3.3 cents per gallon for Minnesota, North Dakota and South Dakota. This price difference equals the pipeline rate per gallon for shipping gasoline from midcontinent refineries to Minnesota. The pattern of price differences suggests that competition among the ten midcontinent refiners determines prices throughout much of the area they serve, including Minnesota.

Illinois and Wisconsin are in a somewhat separate market

area that is served by refineries in Illinois, Indiana and states further east. The number of refineries in this area and their access by pipeline to many sources of crude oil results in a wholesale price for Illinois that is roughly one and one-half cents lower than in Minnesota. Since no refineries east of the Mississippi (other than Amoco's refinery in Indiana) have pipeline access to Minnesota, local prices are not directly affected by prices in Illinois.

It is important to recognize that the adjusted price data is only accurate enough to identify price differences of more than a half cent (see Appendix C, p. C8-C9), and in the case of gasoline this can represent a significant range of error. A one cent reduction in Minnesota's total gasoline expenditures would equal $4.70 per capita; totaling $20 million annually on a statewide basis.[15] Nevertheless, the comparison of wholesale prices indicates that Minnesota's distance from major refining areas in the country is largely responsible for local price levels compared to prices in other midwestern states, and for the nation as whole. When transportation costs (to ship refined product from the midcontinent refineries) are subtracted from the wholesale price, Minnesota pays the same wholesale price for gasoline as the Dakotas, Iowa, Nebraska, Missouri and Kansas.

D. *Trends in the Local and Midcontinent Refining Industry.*

The continued dominance of the three local refineries and Amoco is a key trend in the refining industry that serves Minnesota. Koch, Ashland and Murphy are ideally located for supplying petroleum products to local markets. They are also

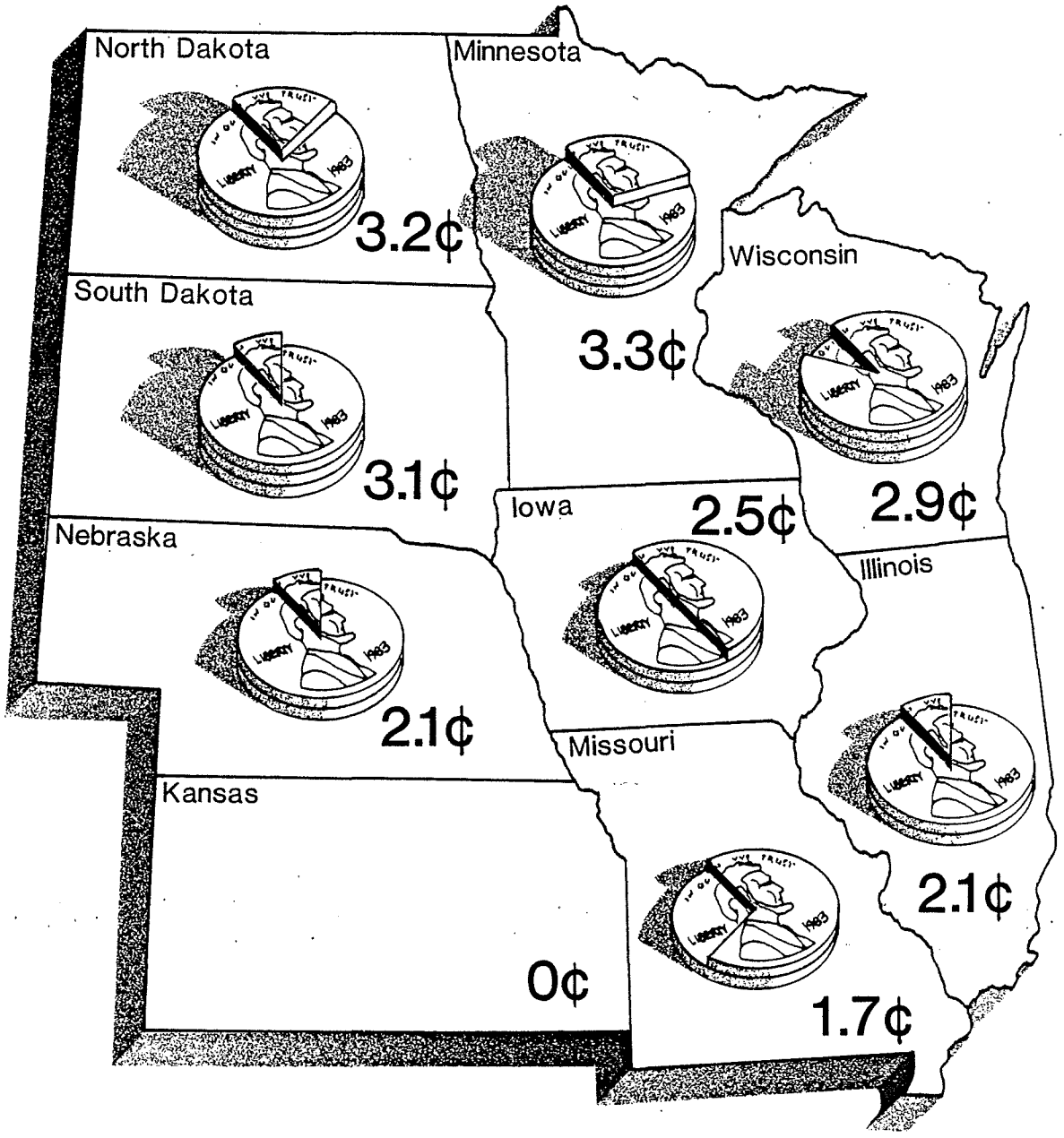


Figure R-3

1983-84 Wholesale Gasoline Price Difference from Midwest Average

Based on an unweighted average of leaded and unleaded regular prices for the two year period. See App. C C8–C9 for further explanation of the price data. The prices are considered accurate to within 0.3 cents.

SOURCE: U.S. DOE, "Petroleum Marketing Monthly", average price of sales for resale by refiners and gas plant operators.

well located for processing crude oil shipped by pipeline from Canada and North Dakota. As a result, more distant refineries in Oklahoma and Kansas will remain a secondary and possibly declining source of motor gasoline supplies for Minnesota.

i. The Three Local Refiners.

The three local refineries are currently in a position to continue their role as Minnesota's primary source of motor gasoline supplies.

One competitive advantage that they enjoy is their relatively close proximity to markets in Minnesota, North Dakota, and northwestern Wisconsin. As discussed previously, Oklahoma and Kansas refineries are the closest large refining center with access by pipeline to Minnesota. Suppliers must absorb a pipeline shipping cost of 3 to 3.5 cents per gallon to bring motor gasoline from these refineries to local terminals. Thus, Koch, Ashland and Murphy have a three cent per gallon cost advantage in shipping costs locally because of their location.

The local refineries are also in an ideal location to compete for crude oil supplies from Canada and North Dakota. Western Canada produces far more crude oil than it can consume, and the surplus is shipped by pipeline, along with crude oil from North Dakota, to U.S. refineries in Illinois and further east and to refineries in eastern Canada. Since Minnesota area refineries are closer, their pipeline shipping costs for these crude oil sources are lower than refineries to the east. This helps keep their cost of purchasing and transporting crude oil low enough to successfully compete with midcontinent and Gulf

coast refineries.

Canadian restrictions on the availability of crude oil for export were a serious problem between 1980 and 1982, but the restrictions have been progressively eliminated in recent years. Crude supplies from both Canada and North Dakota are currently adequate to permit full use of local refining capacity. In fact, Koch Refining is currently completing the first phase of a $200 million expansion to its local refinery based on its optimistic assessment of the availability of Canadian crude oil.[16]

Figure R-4, p. 63, summarizes the recent decline and recovery of production by the three local refineries, as compared to overall consumption of petroleum products in the midwest. As the figure illustrates, overall crude oil processing by Koch, Ashland and Murphy fell 21 percent between 1979 and 1980 due to the tight restrictions that Canada imposed on exports. Canada established the limitations after the 1979 Iranian oil crisis to insure that their own petroleum needs would be met and only surplus domestic production would be exported.

Minnesota area refiners relied heavily on Canadian supplies and, at the time, had only limited access to other crude oil sources. Production cutbacks were unavoidable, and in 1981 Conoco closed its refinery in Wrenshall near Duluth. The refinery was small (9 percent of total Minnesota area capacity at the time) and could only refine a light grade of crude oil on which Canada had imposed a complete export embargo.[17]

Canada began to progressively eliminate restrictions on

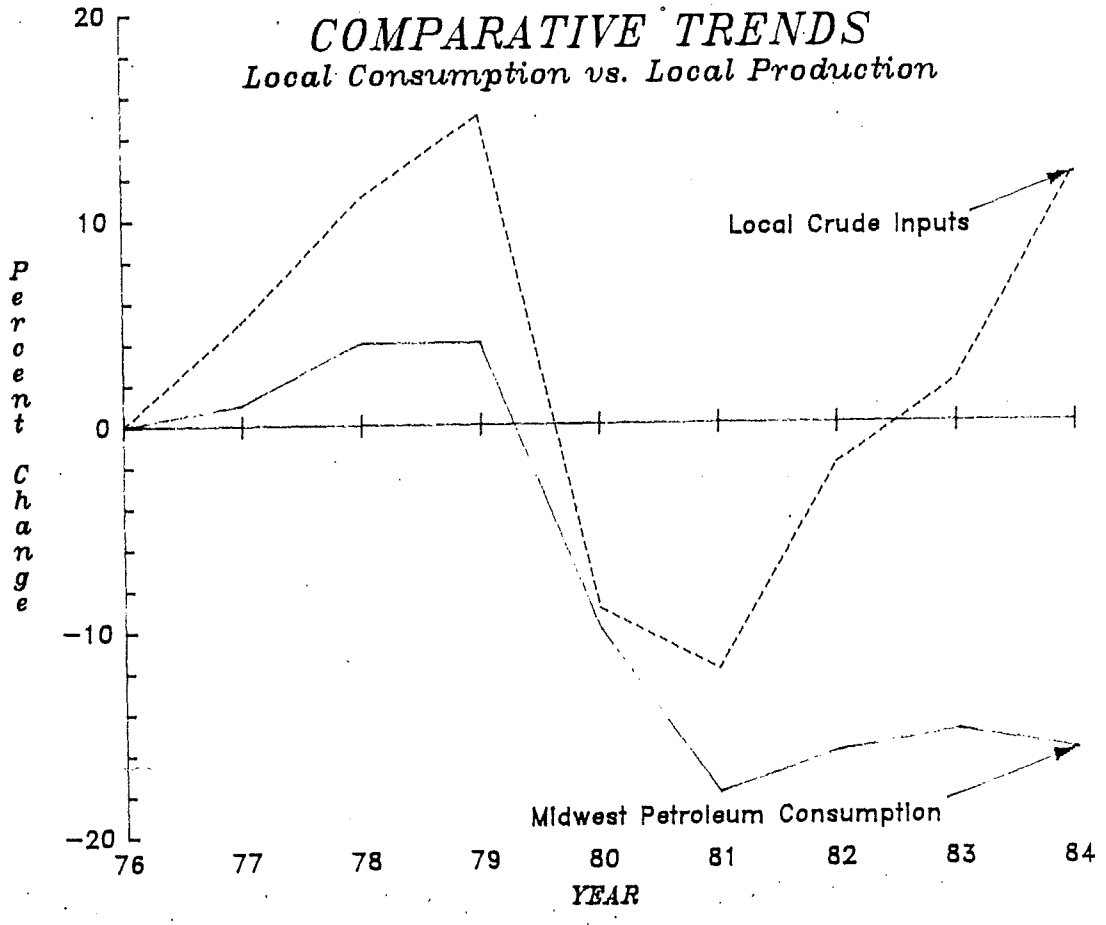
exports beginning in 1982, and today there are no significant limitations. Local refiners have also been able to acquire an increasing portion of their supplies from North Dakota. Consumption of North Dakota crude oil by Koch, Ashland and Murphy increased from 30,000 barrels per day in 1980 to 60,000 barrels per day in 1984. Their consumption of Canadian crude oil increased from 110,000 to 150,000 barrels per day during the same period.[18]

With the increased availability of supplies, production at the three local refineries increased to pre-1980 levels by 1984, demonstrating that they are in a strong position to compete with other more distant refineries. Since petroleum consumption in the midwest fell sharply after 1979, Koch, Ashland and Murphy have had to increase their combined share of total refined product sales in upper midwest in order to increase production. The comparison of growth in local crude oil production versus growth in upper midwest petroleum consumption in Figure R-4 illustrates this trend. In light of their recent performance, these refineries currently appear very capable of maintaining their role as the principal source of supply in Minnesota.

ii. Amoco.

In assessing current trends in gasoline supplies, Amoco represents a unique case. Because of their pipelines to Minnesota from Indiana to North Dakota, they are the only company that ships gasoline to Minnesota from the Illinois/Indiana area. Their other refinery in Mandan, North

FIGURE R-4



SOURCE: U.S. Department of Energy, State Energy Data Report, 1960-84, page 36. Department of Energy and Economic Development, Policy Analysis Division.

NOTE: Local production totals include crude inputs at the Koch, Ashland and Murphy Refineries. Midwest petroleum use includes combined consumption of all petroleum products in Minnesota, North Dakota, South Dakota, Nebraska, Kansas, Missouri and Iowa.

Dakota is relatively close to Minnesota but unlike Koch, Ashland and Murphy, this refinery does not have pipeline access to Canadian crude oil.

Amoco is likely to maintain its current position as a source of supplies in Minnesota because the company has such a substantial investment in the region. The refinery in Mandan is well located for serving the local market, particularly since Amoco has its own pipeline and terminals for distributing petroleum products in Minnesota. The Mandan and the much larger Whiting, Indiana refinery together supply an extensive network of branded retail outlets in the upper midwest.[19] In Minnesota, Amoco maintains 610 retail outlets, more than any other company. With their current supply system and marketing presence, Amoco's presence in Minnesota is well established.

iii. Midcontinent and Gulf Coast Refineries.

Motor gasoline shipments to Minnesota from the south have declined in recent years as production at local refineries has increased, and the current expansion of the Koch refinery may cause this trend to continue. Nevertheless, refineries in Oklahoma and Kansas and, to a lesser extent, refineries on the Gulf coast should continue to be an important source of competition and additional supplies.

Since 1981 total refining capacity in the Oklahoma and Kansas area has declined due to the drop in U.S. petroleum consumption after 1979. Average production by U.S. refineries fell from 88 percent of capacity in 1978 to 69 percent in 1980.[20] This has forced petroleum companies to shut down a

large number of refineries that were less economical or less central to their operations.

The amount of capacity closed in the midcontinent area has been particularly pronounced. Between January of 1980 and 1985, seven refineries with capacities of over 20,000 barrels per day were shut down (see Table R-3, p. 66). Total refining capacity in the area fell 37 percent compared to a nationwide decrease of only 16 percent.[21]

Despite this decline, Oklahoma and Kansas will continue to be a major source of gasoline supplies in the midwest. Refineries in these two states were originally built to refine crude oil from Oklahoma, Kansas and Texas, and they are still well located between crude oil supply sources and the midwest market. Crude oil processing capacity in Oklahoma and Kansas is currently 711,000 barrels per day. By comparison, total capacity in the midwest (including refineries east of the Mississippi River) is 3,075,000 barrels per day, and the combined capacity of the Koch, Ashland, Murphy refineries and the Amoco refinery at Mandan is 301,000 barrels per day.

While additional refinery shutdowns are possible, current overall production levels suggest that midcontinent refineries are generally able to compete with other supply sources. In 1984 crude oil processing at these refineries averaged 85 percent of capacity, much higher than the U.S. average of 76 percent.[22]

TABLE R-3

REFINERY SHUTDOWNS IN THE MIDCONTINENT AREA, 1981-84

REFINERY	LOCATION	CRUDE CAPACITY (barrels/day)
Kansas		
Mobil Oil	*Augusta*	*50,000*
Phillips Petroleum	*Kansas City*	*80,000*
Missouri		
Amoco Oil	*Sugar Creek (Kansas City Area)*	*104,000*
Oklahoma		
Champlin Petroleum	*Enid*	*53,800*
Okmulgee Petroleum	*Okmulgee*	*25,000*
Tosco	*Duncan*	*47,000*
Refineries with under 20,000 b/d capacity	*8 refineries in Kansas, Oklahoma and Nebraska*	*78,000*
TOTAL		*438,500*

SOURCE: U.S. Department of Energy, "Petroleum Supply Annual, 1984," p. 113.

The role of Gulf coast refineries in competing with midcontinent refiners will also continue. Motor gasoline shipments from these refineries to the midwest have increased in recent years, and in 1984 they supplied 20 percent of total gasoline consumption in the midwest.[23] As in the past, only avery small portion of these supplies will reach Minnesota, but access to the Gulf coast refining center should continue to indirectly link Minnesota to the rest of the nation.

iv. Affect of the Koch Expansion on Gasoline Supply Sources.

The current expansion of the Koch refinery will increase its capacity by 38 percent and the capacity of the three local refineries by 20 percent. If this expansion is completed as planned, gasoline shipments to Minnesota from Oklahoma and Kansas will probably decline, and supplies in Minnesota will come almost entirely from the local refineries and Amoco.

The expansion is scheduled to be completed in two stages over the next three years. The first stage should be completed in 1986 and will increase the crude processing capacity of the refinery from 137,000 to 175,000 barrels per day. The second stage, scheduled to be completed in 1988, will increase total capacity to 207,000 barrels per day.[24]

Koch Refining will need to create a market for their increased gasoline production by replacing sales of other refineries in the upper midwest. Despite a decline in gasoline prices since 1981, consumption in the United States and Minnesota has failed to increase significantly. Average automobile efficiency continues to improve as new, more efficient cars replace older models, and this trend will continue through the rest of the 1980's. The U.S. Department of Energy and other sources forecast changes in gasoline consumption of less than one percent per year during the rest of the 1980s.[25]

Among the competing sources of gasoline in Minnesota, midcontinent supplies are most likely to be replaced. As previous sections have discussed, the proximity of Ashland and

Murphy to both local markets and crude oil from North Dakota and Canada give these two refineries some of the same advantages that Koch has locally. With its own nearby refinery and petroleum product pipeline, Amoco is also well established. Midcontinent refineries are in the weakest competitive position because of their greater distance from Minnesota.

The refinery expansion will permit Koch Refining to produce enough additional gasoline to satisfy 26 percent of current state gasoline demand and will, therefore, supply a significant portion of total gasoline sales in Minnesota.* It would be reasonable to assume that roughly half of this production, or about 13 percent of total state gasoline consumption, will be sold in Minnesota. Because of pipeline routes and shipping costs, the Koch refinery can compete most effectively in Minnesota, eastern North and South Dakota, northern Iowa, and northwestern Wisconsin. Most of the demand in this market area is in Minnesota, and many local suppliers that ship gasoline from the south will consider acquiring more of their supplies from Koch and the other local refineries instead.

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* - Based on the percentage of capacity at which Minnesota area refineries operated in 1984, the Koch refinery will use perhaps 94 percent of the 70,000 barrels per day in additional capacity. Based on average yields of motor gasoline locally, about 50 percent of the additional crude oil inputs will be refined into gasoline. Thus, general information on local refineries suggests that the expansion will result in a 33,000 barrel per day increase in local gasoline production (70,000 X .94 X .50). Since total motor gasoline consumption in Minnesota during 1984 averaged 128,000 barrels per day, the increase in production would equal roughly 26 percent state gasoline use.

A loss of sales equal to roughly 13 percent of Minnesota gasoline consumption will be large enough to significantly reduce and perhaps almost completely eliminate gasoline shipments from midcontinent refineries. If Koch, Ashland and Murphy refine roughly 67 percent (two thirds) of the gasoline supplied in Minnesota, raising this share by 13 percent will increase their percentage to around 80 percent of gasoline sales. A portion of the remaining 20 percent is supplied by Amoco. Thus, the expansion will make the Koch, Ashland, Murphy and Amoco refineries an increasingly dominant source of supplies and leave very little of Minnesota's gasoline sales for the twelve refineries in Oklahoma and Kansas.

The position of the Koch refinery as the largest source of motor gasoline in Minnesota will also become more clearly established. As discussed previously, Koch currently refines over 30 percent of state gasoline supplies. An additional 13 percent of total supplies will increase their share to over 40 percent.

While Koch's expansion will lead to an increasingly concentrated local refining industry, continued access to refineries in the midcontinent area and the Gulf coast may limit the importance of this development. Most suppliers are large companies that continually appraise the price and availability of gasoline from a variety of supply sources. They generally supply distributors and their own marketing operations in several states and usually own refineries in other parts of the country. The size and sophistication of these companies makes

them able to quickly turn to southern sources of supply if the price or availability of locally produced gasoline is not satisfactory. Even if they rely almost entirely on Minnesota area refineries, refinery production in Oklahoma and Kansas will still be an important source of competitive pressure.

v. National Refining Trends.

As noted on page 28, from World War II until 1970 the refining capacity controlled by the twenty largest refiners slowly increased to 85%. One frequently cited cause for the gasoline shortages was a lack of domestic refining capacity. In response to this, Congress implemented economic incentives for certain types of small refiners. During the period 1970 to 1980 when these incentives were in place the top twenty concentration of refining capacity decreased from 85% to 75%. Since decontrol and the removal of the incentives this trend has reversed and in 1984 the twenty largest refiners controlled 79% of the capacity.[26]

It is important to note that historically the refining level has always been a bottleneck in the industry. In the early years of the industry it was used to control the price paid for the raw material, crude oil. It was also used to control the supply and therefore price of refined products available for sale to consumers. It is also noteworthy that the the major companies report little profit at the refining level of the industry. (See page 23.) This study did not investigate barriers to entry at the refining level, but it appears to be an important element in evaluating the overall competitiveness of the industry.

E. *Trends In Minnesota's Supply Industry*.

Moving from the refining industry to the supply industry, the most prominent trend in Minnesota in recent years has been an increase in the concentration of the supply industry. While it is not clear whether this trend will continue, the number of motor gasoline suppliers serving Minnesota has declined somewhat in recent years, and the share of the market held by Minnesota's largest suppliers has increased.

Between 1978 and 1984 the number of companies supplying over one percent of Minnesota's gasoline consumption fell from 21 to 17.[27] Four companies withdrew from Minnesota, including Champlin, Gulf, Shell and Texaco. (Texaco re-entered Minnesota in 1984 through its purchase of Getty Oil Company.) One other company entered the state and another supplier fell below one percent of state sales. Because of limitations in available data sources, the number of firms with less than one percent of the market in Minnesota is uncertain, but as a group they account for less than four percent of total sales.

The departure of the four firms reflects a nationwide trend among major oil companies to consolidate their marketing operations. In the 1960's these companies attempted to enter as many areas of the country as possible in an effort to capture a larger share of the growing demand for gasoline. As gasoline consumption has levelled out and then declined since 1973, major oil companies re-evaluated the profitability of this strategy, and today they are focusing their resources on regions where they have a strong marketing presence and competitive supply arrangements.

While the departure of these four companies reduced the impact of declining sales on suppliers remaining in Minnesota, the information in Table R-4, p. 73, suggests that one or more of the largest suppliers captured all of the available sales. Between 1978 and 1984 the combined market share held by Minnesota's four largest suppliers increased about ten percentage points, roughly the same as the nine percent combined market share that the four departing supply companies held in 1978.[28]

Due to these trends, Minnesota's gasoline supply industry has become more concentrated in recent years. Between 1978 and 1984, gasoline supplied by the four largest supply companies increased from 48 to 58 percent, the market share of the second four largest suppliers declined two percentage points to 18 percent, and the market share of all remaining suppliers declined about eight percentage points to 24 percent of 1984 sales.

Since Koch, Ashland, Murphy and Amoco supplied 55 percent of state gasoline sales in 1984, their ownership of nearby refineries has clearly been an important factor in their current position as direct suppliers in Minnesota. However, their dominance at the refining level will not necessarily lead to an increasingly concentrated local supply industry. Their success as suppliers depends on whether they can maintain their current marketing operations and their business with distribution companies. If they are not satisfied with the profitability of their marketing activities, then they may choose to maintain refinery production by providing petroleum products to other supply companies instead.

In general, the future direction of Minnesota's supply industry remains uncertain and will depend in large part on the marketing strategies and success of both current and potential competing companies.

TABLE R-4

INDUSTRY CONCENTRATION OF GASOLINE SUPPLIERS IN MINNESOTA

	1978	1981	1984
4 firm concentration ratio	*48%*	*50%*	*58%*
8 firm concentration ratio	*68%*	*72%*	*76%*
Total suppliers with over 1% of sales	*21*	*18*	*17*

(SOURCE: Department of Energy and Economic Development, Policy Analysis Division. Data collected in conjunction with the U.S. Department of Energy monthly reporting system for petroleum suppliers, Form EIA-782C.)

F. *U. S. Gasoline Supplier Marketshare Trends.*

Data on marketshare trends recently was made available by DOE. The following tables present two measures of competition, four-firm concentration and Herfindahl Indexes. For a detailed discussion of these important measures see p. 140-142.

i. Four-Firm Concentration

The following tables and graph depict changes in marketshare of the four largest suppliers of gasoline in each state. The first is a simple display of data for the period of price and allocation controls, 1975-1982. The second indicates that twenty states have had significant increases of four-firm concentration since decontrol, 1980-1985. The third describes the changes in greater detail. Finally, a graph depicts the relative degree and direction of changes in our region.

FOUR-FIRM CONCENTRATION RATIOS [a]

States with Increased Concentration

State	1975	1976	1977	1978	1979	1980	1981	1982
FLORIDA	35 %	35 %	37 %	37 %	38 %	36 %	36 %	36 %
MISSOURI	33 %	34 %	33 %	34 %	32 %	33 %	35 %	38 %
TENNESSEE	38 %	40 %	40 %	43 %	42 %	41 %	40 %	40 %
WISCONSIN	35 %	34 %	35 %	35 %	37 %	38 %	38 %	40 %
COLORADO	38 %	34 %	36 %	35 %	34 %	34 %	37 %	42 %
MASSACHUSETTS	45 %	44 %	42 %	43 %	42 %	44 %	41 %	45 %
CONNECTICUT	44 %	44 %	41 %	42 %	42 %	41 %	44 %	46 %
ARKANSAS	40 %	40 %	44 %	44 %	45 %	45 %	46 %	50 %
OKLAHOMA	42 %	42 %	41 %	42 %	47 %	44 %	50 %	47 %
NEW MEXICO	49 %	48 %	47 %	49 %	45 %	46 %	40 %	39 %
KANSAS	37 %	41 %	33 %	38 %	36 %	35 %	43 %	48 %
MICHIGAN	42 %	46 %	47 %	48 %	49 %	48 %	49 %	49 %
UTAH	45 %	43 %	50 %	50 %	56 %	51 %	55 %	56 %
IDAHO	48 %	48 %	45 %	47 %	51 %	48 %	50 %	60 %
INDIANA	43 %	44 %	46 %	48 %	48 %	48 %	47 %	48 %
ILLINOIS	43 %	44 %	46 %	49 %	50 %	50 %	49 %	51 %
PENNSYLVANIA	45 %	45 %	46 %	45 %	45 %	47 %	52 %	54 %
NEVADA	53 %	49 %	52 %	53 %	53 %	55 %	53 %	48 %
RHODE ISLAND	44 %	44 %	46 %	48 %	47 %	48 %	45 %	56 %
NEW HAMPSHIRE	51 %	50 %	51 %	52 %	53 %	54 %	50 %	56 %
MARYLAND	46 %	47 %	48 %	50 %	49 %	50 %	52 %	52 %
MAINE	52 %	52 %	52 %	51 %	52 %	52 %	51 %	54 %
CALIFORNIA	52 %	54 %	54 %	54 %	54 %	55 %	53 %	52 %
WYOMING	50 %	49 %	50 %	50 %	59 %	59 %	60 %	59 %
ARIZONA	52 %	52 %	53 %	56 %	56 %	57 %	56 %	54 %
WASHINGTON	53 %	54 %	53 %	54 %	54 %	55 %	55 %	53 %
KENTUCKY	53 %	53 %	54 %	56 %	59 %	58 %	57 %	58 %
NORTH DAKOTA	60 %	60 %	61 %	64 %	66 %	67 %	63 %	63 %
MINNESOTA *	51 %	55 %	55 %	58 %	59 %	60 %	61 %	66 %
MONTANA	48 %	48 %	45 %	49 %	54 %	57 %	63 %	70 %
OREGON	61 %	60 %	61 %	59 %	59 %	59 %	59 %	59 %
OHIO	53 %	53 %	54 %	56 %	57 %	60 %	63 %	63 %
VERMONT	51 %	52 %	53 %	54 %	55 %	54 %	54 %	58 %
DELAWARE	58 %	55 %	58 %	56 %	59 %	62 %	69 %	72 %
WEST VIRGINIA	63 %	62 %	66 %	65 %	67 %	66 %	70 %	73 %
DISTRICT OF COL.	75 %	72 %	73 %	78 %	77 %	78 %	82 %	83 %

States with Decreased Concentration

ALABAMA	39 %	38 %	38 %	38 %	39 %	38 %	34 %	35 %
MISSISSIPPI	43 %	42 %	41 %	40 %	42 %	41 %	38 %	37 %
GEORGIA	39 %	37 %	38 %	40 %	43 %	42 %	42 %	41 %
NORTH CAROLINA	42 %	42 %	43 %	45 %	45 %	46 %	44 %	42 %
NEBRASKA	42 %	43 %	41 %	43 %	43 %	45 %	44 %	41 %
IOWA	42 %	43 %	42 %	44 %	43 %	42 %	44 %	46 %
SOUTH DAKOTA	52 %	52 %	52 %	54 %	55 %	52 %	51 %	47 %
TEXAS	44 %	41 %	43 %	40 %	41 %	40 %	40 %	38 %
NEW YORK	45 %	44 %	42 %	40 %	40 %	41 %	39 %	41 %
SOUTH CAROLINA	46 %	45 %	45 %	46 %	47 %	46 %	46 %	46 %
LOUISIANA	50 %	48 %	47 %	48 %	48 %	47 %	46 %	46 %
VIRGINIA	46 %	45 %	44 %	45 %	44 %	43 %	42 %	44 %
NEW JERSEY	50 %	48 %	48 %	43 %	41 %	40 %	44 %	42 %

(Source: Deregulated Gasoline Marketing, p. 91)

(a) - Four Firm Concentration equals percent of total gasoline volume sold by the four lrgest suppliers in each state.

* - Minnesota values not corrected. For corrected values for MN for 1978-1982 see table p. 75.

SUPPLIER FOUR FIRM MARKETSHARE CONCENTRATIONS

State	1978	1979	1980	1981	1982	1983	1984	1985
1985 > 1980								
FLORIDA	37%	38%	36%	37%	36%	36%	38%	38%
MISSOURI	34%	32%	33%	35%	38%	39%	41%	42%
VIRGINIA	45%	44%	43%	42%	46%	44%	46%	44%
COLORADO	35%	34%	34%	37%	43%	43%	37%	44%
WISCONSIN	35%	36%	38%	38%	39%	41%	40%	45%
PENNSYLVANIA	45%	44%	44%	46%	50%	52%	49%	46%
MASSACHUSETTS	43%	42%	44%	41%	45%	46%	47%	47%
CONNECTICUT	42%	42%	41%	44%	47%	47%	45%	48%
NEW JERSEY	43%	41%	40%	44%	43%	46%	43%	52%
OKLAHOMA	42%	47%	44%	50%	49%	48%	44%	53%
MICHIGAN	48%	49%	48%	49%	50%	51%	46%	53%
INDIANA	48%	48%	48%	47%	49%	52%	47%	54%
ILLINOIS	49%	50%	50%	49%	51%	52%	47%	54%
NEW YORK	40%	40%	41%	39%	41%	42%	42%	56%
KANSAS	38%	36%	35%	39%	47%	50%	56%	57%
UTAH	50%	56%	51%	55%	56%	51%	59%	57%
IDAHO	47%	51%	48%	51%	57%	52%	62%	57%
MINNESOTA*	48%	50%	49%	50%	56%	54%	58%	58%
NEW HAMPSHIRE	52%	53%	54%	51%	56%	57%	57%	58%
MAINE	51%	51%	52%	51%	55%	57%	54%	60%
WYOMING	49%	59%	59%	59%	61%	58%	55%	60%
MARYLAND	50%	49%	50%	52%	52%	57%	57%	60%
OREGON	59%	59%	59%	59%	59%	66%	65%	63%
KENTUCKY	56%	59%	58%	57%	58%	59%	58%	63%
RHODE ISLAND	48%	47%	48%	45%	56%	55%	57%	64%
MONTANA	49%	54%	57%	62%	72%	66%	59%	66%
OHIO	56%	57%	60%	63%	64%	67%	60%	69%
WEST VIRGINIA	65%	67%	66%	69%	74%	82%	83%	76%
DELAWARE	56%	59%	62%	69%	77%	82%	78%	83%
VERMONT	54%	55%	54%	53%	59%	77%	78%	84%
D.C.	78%	77%	77%	82%	82%	86%	87%	84%
1985 < 1980								
TEXAS	40%	41%	40%	40%	40%	42%	41%	35%
ARKANSAS	44%	45%	44%	45%	51%	47%	44%	36%
TENNESSEE	43%	42%	41%	40%	40%	39%	38%	37%
MISSISSIPPI	40%	42%	41%	38%	38%	36%	39%	38%
LOUISIANA	48%	48%	47%	46%	47%	43%	44%	39%
GEORGIA	40%	43%	42%	42%	40%	38%	39%	39%
N. CAROLINA	45%	45%	46%	44%	42%	40%	42%	42%
NEBRASKA	43%	43%	45%	44%	40%	41%	44%	44%
NEW MEXICO	49%	45%	46%	40%	43%	50%	44%	45%
S. CAROLINA	46%	47%	46%	46%	45%	43%	42%	45%
S. DAKOTA	54%	55%	52%	51%	46%	41%	50%	50%
WASHINGTON	54%	54%	55%	55%	54%	58%	55%	53%
ARIZONA	56%	56%	57%	56%	56%	58%	59%	56%
N. DAKOTA	64%	66%	66%	63%	60%	61%	57%	62%
1985 = 1980								
ALABAMA	38%	39%	38%	34%	34%	35%	36%	38%
IOWA	44%	43%	42%	44%	44%	41%	43%	42%
CALIFORNIA	54%	54%	55%	53%	53%	57%	58%	55%
NEVADA	53%	53%	55%	53%	49%	54%	53%	55%

(Source: DOE, Energy Information Agency, based on EIA-782C data.)

* -Minnesota values adjusted by DEED; 1985 is estimated.

DEGREE OF CHANGE SINCE DEREGULATION

FOUR-FIRM CONCENTRATIONS

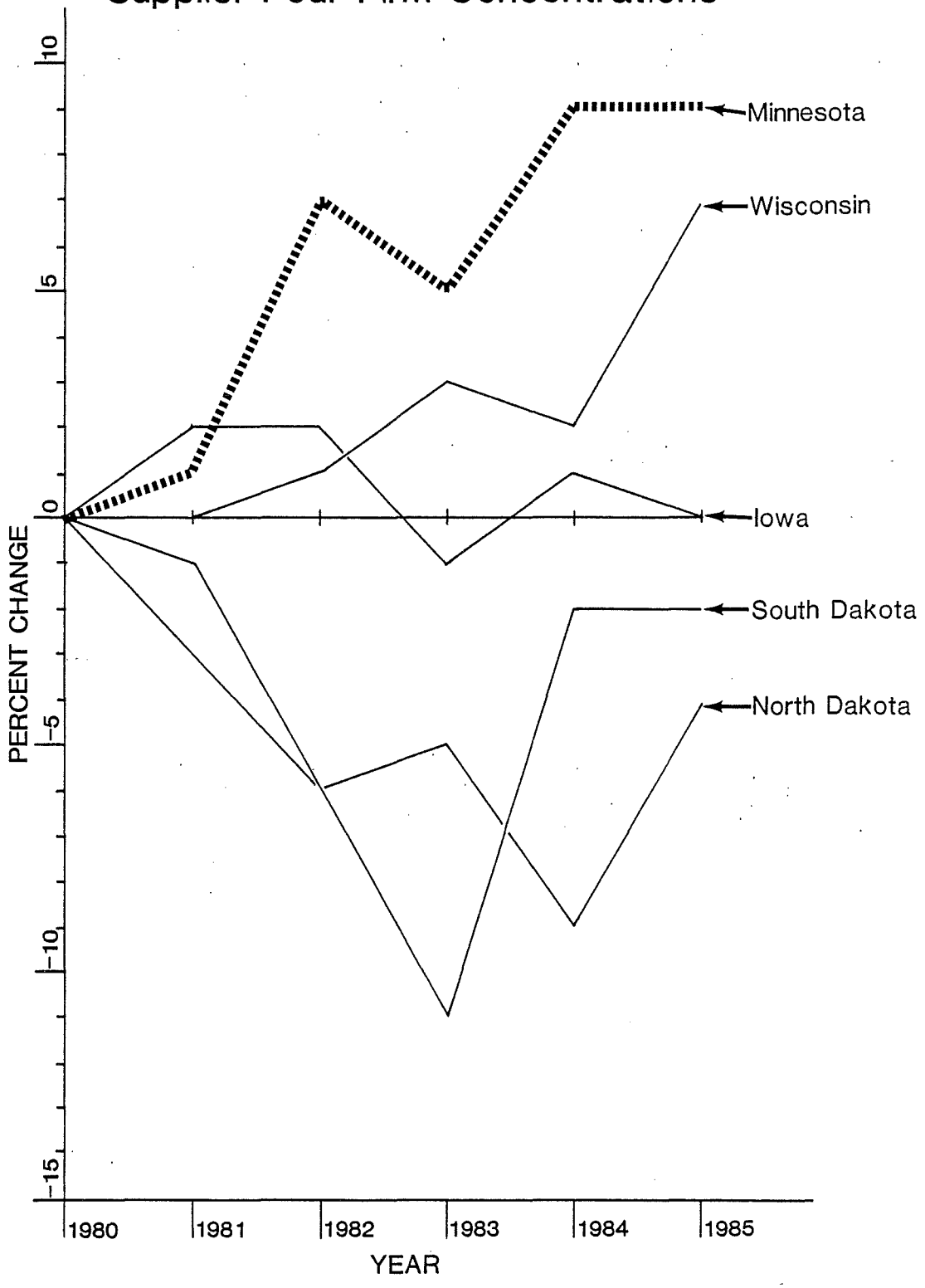
STATE	INCREASE 1980-1985	STATE	DECREASE 1980-1985	NO SIGNIFICANT CHANGE 1980-1985
INDIANA	*6%*	*ARKANSAS*	*8%*	*ALABAMA*
UTAH	*6%*	*LOUISIANA*	*8%*	*ARIZONA*
WISCONSIN	*7%*			*CALIFORNIA*
CONNECTICUT	*7%*			*FLORIDA*
D.C.	*7%*			*GEORGIA*
MAINE	*8%*			*ILLINOIS*
MINNESOTA	*9%*			*IOWA*
MISSOURI	*9%*			*KENTUCKY*
OKLAHOMA	*9%*			*MARYLAND*
IDAHO	*9%*			*MASSACHUSETTS*
MONTANA	*9%*			*MICHIGAN*
OHIO	*9%*			*MISSISSIPPI*
COLORADO	*10%*			*N. CAROLINA*
WEST VIRGINIA	*10%*			*N. DAKOTA*
NEW JERSEY	*12%*			*NEBRASKA*
NEW YORK	*15%*			*NEVADA*
RHODE ISLAND	*16%*			*NEW HAMPSHIRE*
DELAWARE	*21%*			*NEW MEXICO*
KANSAS	*22%*			*OREGON*
VERMONT	*30%*			*PENNSYLVANIA*
				S. CAROLINA
				S. DAKOTA
				TENNESSEE
				TEXAS
				VIRGINIA
				WASHINGTON
				WYOMING

(Source: DOE, Energy Information Agency, based on EIA-782C data)*

(a) - This table defines a significant change as greater than five percent. The statistical validity of the data is unknown. Based on what is known about the data, it is reasonable to assume that changes of up to five percent are well within the limits of the data and may not necessarily reflect changes in the real world. The greater the reported change, the greater the confidence that a significant change in marketshare concentration has in fact occurred.

* - (1983-1985 based on EIA-782C data, 1978-1982 from EIA-25 data)

Regional Trends Since Deregulation
Supplier Four Firm Concentrations



SOURCE: Table, p. 76

ii. Herfindahl Indexes

The second measure of competition is known as the Herfindahl Index. This index quantifies the marketshare of all suppliers relative to each other in a given state. In this measure of competitiveness, the changes since deregulation are not so clear cut. However, it can be said that most of the significant changes have been in the direction of increased concentration.

The tabular and graphic displays for the Herfindahl Indexes are arranged in the same manner as the Four firm concentration just preceding. First, data tables for 1975-1982 followed by 1978-1985. Third a summary table of changes since deregulation. Last, the table of relative changes in the region.

It is important to note that both these measures of competitiveness, the Four-Firm Concentration and the Herfindahl Indexes, have significant methodological problems. For a discussion of these important considerations see Appendix C, p. C2-C5.

HERFINDAHL INDEXES [a]

States with Increased Concentration

State	1975	1976	1977	1978	1979	1980	1981	1982
MISSOURI	.558	.544	.536	.552	.535	.527	.572	.611
WISCONSIN	.600	.591	.599	.611	.606	.629	.633	.659
TENNESSEE	.633	.654	.671	.720	.717	.690	.663	.667
GEORGIA	.689	.672	.687	.711	.769	.758	.735	.705
NEBRASKA	.704	.706	.657	.677	.698	.723	.755	.708
COLORADO	.644	.585	.634	.624	.627	.627	.645	.747
INDIANA	.722	.723	.743	.774	.767	.770	.776	.781
IOWA	.712	.712	.680	.702	.691	.682	.747	.790
MICHIGAN	.747	.804	.815	.806	.829	.820	.833	.836
MASSACHUSETTS	.805	.814	.800	.790	.782	.844	.788	.840
OKLAHOMA	.759	.751	.754	.712	.791	.909	.894	.851
KANSAS	.656	.731	.589	.657	.620	.608	.731	.877
ARKANSAS	.662	.690	.722	.775	.796	.771	.740	.880
ILLINOIS	.805	.797	.819	.875	.905	.908	.872	.933
CONNECTICUT	.797	.790	.757	.767	.786	.796	.887	.941
MARYLAND	.867	.879	.883	.915	.909	.909	.947	.971
WASHINGTON	.982	.1013	.1031	.1046	.1065	.1102	.1069	.1044
PENNSYLVANIA	.812	.812	.825	.840	.839	.873	.934	.1045
MAINE	.998	.988	.1003	.974	.975	.997	.976	.1060
KENTUCKY	.958	.962	.983	.1012	.1065	.1064	.988	.1064
NEW HAMPSHIRE	.923	.919	.916	.939	.960	.1026	.903	.1068
RHODE ISLAND	.884	.910	.918	.975	.915	.954	.893	.1076
UTAH	.821	.764	.859	.883	.1031	.940	.1069	.1081
WYOMING	.890	.825	.877	.863	.1211	.1181	.1116	.1082
IDAHO	.880	.876	.854	.894	.981	.908	.925	.1154
OREGON	.1169	.1181	.1279	.1213	.1231	.1259	.1209	.1225
VERMONT	.914	.951	.979	.1015	.1050	.1023	.1049	.1298
OHIO	.1063	.1023	.1071	.1117	.1195	.1291	.1372	.1387
WEST VIRGINIA	.1252	.1277	.1387	.1367	.1435	.1409	.1481	.1664
MINNESOTA - *	.1009	.1141	.1145	.1287	.1239	.1267	.1476	.1687
DELAWARE	.1043	.993	.1008	.994	.1127	.1124	.1626	.1774
MONTANA	.895	.893	.841	.866	.1018	.1179	.1352	.1807
DISTRICT OF COL.	.1826	.1712	.1738	.1985	.1917	.2000	.2282	.2208
HAWAII	.2325	.2138	.2013	.2044	.1981	.2192	.2425	.2332

States with Decreased Concentration

ALABAMA	.680	.658	.666	.668	.686	.640	.582	.562
TEXAS	.716	.658	.678	.651	.642	.618	.603	.588
FLORIDA	.626	.626	.627	.632	.646	.617	.609	.607
MISSISSIPPI	.789	.749	.686	.667	.709	.704	.649	.626
NEW MEXICO	.867	.834	.804	.826	.804	.833	.718	.707
NORTH CAROLINA	.729	.733	.740	.772	.807	.828	.759	.720
NEW YORK	.805	.787	.755	.734.	.734	.757	.724	.742
LOUISIANA	.833	.785	.743	.781	.795	.808	.740	.761
NEW JERSEY	.978	.909	.869	.799	.737	.732	.788	.769
VIRGINIA	.791	.773	.751	.761	.764	.742	.725	.774
SOUTH CAROLINA	.816	.809	.814	.825	.866	.847	.816	.775
SOUTH DAKOTA	.923	.913	.903	.969	.1002	.949	.920	.845
NEVADA	.997	.921	.966	.987	.1024.	.1069	.1014	.910
CALIFORNIA	.968	.1001	.980	.1002	.1009	.985	.977	.932
ARIZONA	.1030	.1010	.1020	.1057	.1055	.1151	.1164	.1021
NORTH DAKOTA	.1309	.1284	.1268	.1363	.1403	.1337	.1243	.1268

(Source: Deregulated Gasoline Marketing, p. 90)

(a) - The Herfindahl Index is defined on p. 141. The U.S. Deptartment of Justice interprets Herfindahl's greater than .18 as concentrated markets, .10 -.18 as moderately concentrated, and less than .10 as unconcentrated.

* - Minnesota indexes were not recalculated. For corrected 1978-1982 values for MN see table on p. 80.

SUPPLIER HERFINDAHL INDEXES

State	1978	1979	1980	1981	1982	1983	1984	1985
1985 > 1980								
FLORIDA	.632	.646	.617	.611	.600	.575	.608	.638
ALABAMA	.658	.683	.639	.581	.553	.556	.575	.642
MISSOURI	.545	.529	.522	.567	.621	.620	.645	.713
IOWA	.695	.686	.678	.746	.753	.727	.714	.715
WISCONSIN	.605	.600	.625	.632	.671	.697	.678	.767
NEBRASKA	.669	.691	.716	.752	.699	.676	.731	.806
COLORADO	.614	.619	.624	.644	.754	.796	.670	.834
PENNSYLVANIA	.808	.806	.819	.829	.990	.1016	.963	.852
MASSACHUSETTS	.790	.782	.828	.788	.837	.836	.861	.896
INDIANA	.772	.766	.769	.775	.814	.868	.785	.907
CONNECTICUT	.767	.788	.796	.887	.952	.915	.822	.941
MICHIGAN	.806	.829	.820	.831	.861	.886	.821	.949
OKLAHOMA	.711	.788	.909	.894	.914	.889	.787	.980
CALIFORNIA	.1002	.1009	.983	.974	.949	.1017	.1050	.986
ILLINOIS	.875	.905	.907	.871	.944	.943	.854	.994
NEW JERSEY	.799	.737	.730	.787	.796	.866	.793	.1007
NEVADA	.987	.1024	.1069	.1014	.918	.1012	.1068	.1089
UTAH	.883	.1031	.940	.1068	.1089	.963	.1145	.1096
IDAHO	.894	.981	.908	.947	.1131	.1026	.1174	.1106
NEW YORK	.734	.734	.757	.723	.755	.758	.807	.1170
MARYLAND	.915	.909	.909	.947	.974	.1099	.1139	.1176
KANSAS	.650	.615	.604	.680	.919	.1043	.1229	.1183
NEW HAMPSHIRE	.939	.960	.1026	.914	.1088	.1114	.1117	.1214
MAINE	.974	.975	.997	.976	.1087	.1107	.1088	.1228
RHODE ISLAND	.975	.915	.953	.893	.1094	.1076	.1084	.1294
OREGON	.1213	.1240	.1259	.1209	.1229	.1386	.1393	.1332
KENTUCKY	.1012	.1065	.1064	.987	.1093	.1147	.1182	.1362
MONTANA	.866	.1018	.1179	.1345	.1866	.1529	.1212	.1458
OHIO	.1117	.1195	.1291	.1366	.1428	.1426	.1355	.1547
WEST VIRGINIA	.1366	.1434	.1409	.1472	.1749	.2071	.2148	.2104
D.C.	.1985	.1917	.2000	.2282	.2271	.2837	.2891	.3076
DELAWARE	.994	.1111	.1224	.1614	.2373	.2724	.1980	.3103
VERMONT	.1015	.1050	.1023	.1043	.1331	.2328	.2548	.3502
MINNESOTA*	.820	.834	.818	.855	.1030	.983	.1078	.
1985 < 1980								
TEXAS	.650	.641	.617	.599	.616	.634	.620	.558
TENNESSEE	.719	.716	.689	.662	.655	.621	.588	.598
ARKANSAS	.758	.785	.766	.732	.897	.828	.732	.615
LOUISIANA	.781	.795	.809	.739	.774	.666	.673	.615
GEORGIA	.711	.769	.758	.735	.691	.619	.627	.669
MISSISSIPPI	.666	.708	.704	.649	.640	.610	.653	.697
N. CAROLINA	.772	.807	.828	.759	.720	.679	.697	.714
VIRGINIA	.761	.764	.742	.723	.790	.736	.777	.731
S. CAROLINA	.825	.866	.847	.816	.760	.708	.690	.753
NEW MEXICO	.826	.803	.833	.717	.773	.962	.828	.792
S. DAKOTA	.963	.998	.945	.914	.835	.754	.891	.933
WASHINGTON	.1046	.1065	.1102	.1068	.1070	.1184	.1099	.1036
NORTH DAKOTA	.1361	.1402	.1335	.1251	.1218	.1149	.1052	.1117
ARIZONA	.1057	.1055	.1151	.1164	.1066	.1169	.1183	.1117
WYOMING	.863	.1211	.1181	.1111	.1116	.1109	.1007	.1128

(Source: DOE, Energy Information Agency, EIA-782C data.)

* - Minnesota values adjusted by DEED for 1978-1984. 1985 not available. Computer sort based upon 1985 value placed MN at end of list due to null value.

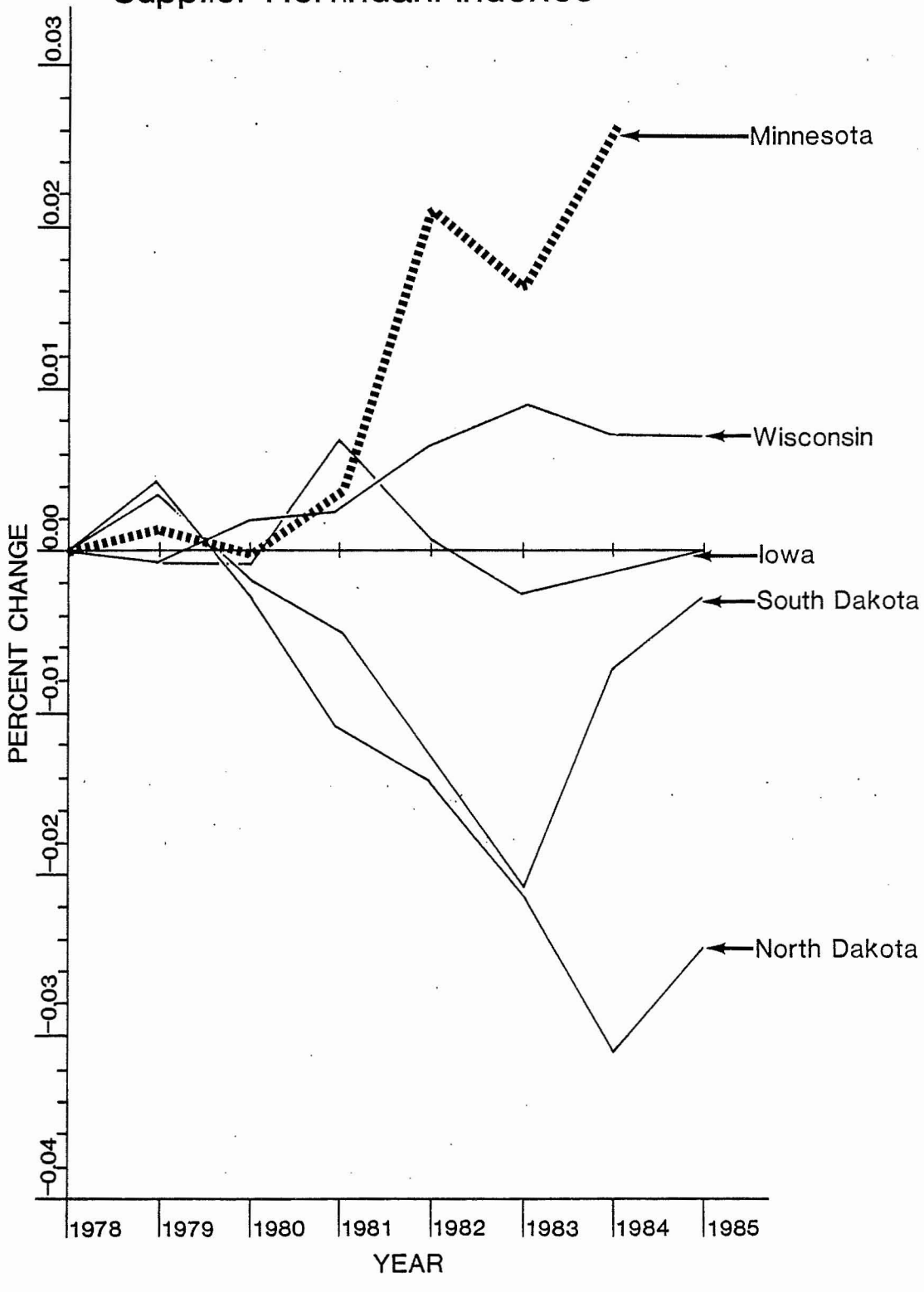
DEGREE OF CHANGE SINCE DEREGULATION - HERFINDAHL INDEX

	1985	1980-1985
		SIGNIFICANT INCREASE
MICHIGAN	. 949	.012
INDIANA	. 907	.014
WISCONSIN	. 767	.014
CONNECTICUT	. 941	.015
UTAH	.1096	.015
NEW HAMPSHIRE	.1214	.019
MISSOURI	. 713	.019
NEBRASKA	. 806	.019
IDAHO	.1106	.020
COLORADO	. 834	.021
MAINE	.1228	.023
OHIO	.1547	.025
MINNESOTA *		.026
MARYLAND	.1176	.027
NEW JERSEY	.1007	.027
MONTANA	.1458	.028
KENTUCKY	.1362	.030
RHODE ISLAND	.1294	.034
NEW YORK	.1170	.042
KANSAS	.1183	.058
WEST VIRGINIA	.2104	.070
D.C.	.3076	.107
DELAWARE	.3103	.188
VERMONT	.3502	.248
		SIGNIFICANT DECREASE
ARKANSAS	. 615	.015
LOUISIANA	. 615	.019
NORTH DAKOTA	.1117	.022
		NO SIGNIFICANT CHANGE
TEXAS	. 558	.006
TENNESSEE	. 598	.008
FLORIDA	. 638	.002
ALABAMA	. 642	.001
GEORGIA	. 669	.009
MISSISSIPPI	. 697	.001
N. CAROLINA	. 714	.009
IOWA	. 715	.004
VIRGINIA	. 731	.001
S. CAROLINA	. 753	.009
NEW MEXICO	. 792	.004
PENNSYLVANIA	. 852	.004
MASSACHUSETTS	. 896	.007
S. DAKOTA	. 933	.001
OKLAHOMA	. 980	.008
CALIFORNIA	. 986	.000
ILLINOIS	. 994	.009
WASHINGTON	.1036	.007
NEVADA	.1089	.002
ARIZONA	.1117	.004
WYOMING	.1128	.006
OREGON	.1332	.008

(Source: DOE, Energy Information Agency. 1978-1982 data based on EIA-25. 1983-1985 data based on EIA-782C)

* - Corrected value for 1985 not available. Increase based upon 1980-1984.

Regional Trends
Supplier Herfindahl Indexes



(.001 1 percentage point: 1000 points = 1)

SOURCE: Table p. 80

FOOTNOTES

1. Minnesota Department of Energy and Economic Development, Policy Analysis Division.

2. ibid.

3. Minnesota Department of Revenue, Petroleum Tax Division.

4. Refinery capacity data taken from: U.S. Department of Energy, "Petroleum Supply Annual, 1984," pp. 92, 98.

5. National Petroleum News 1985 Factbook, pp. 14-15.

6. U.S. Department of Energy, "Petroleum Supply Annual, 1984", pp. 90-94.

7. ibid., pp. 47, 54.

8. ibid., p. 82.

9. Minnesota Department of Revenue, Petroleum Tax Division.

10. Minnesota Department of Energy and Economic Development, Policy Analysis Division.

11. U.S. Department of Energy, "Petroleum Supply Annual, 1984," pp. 16-17, 23.

12. Minnesota Department of Energy and Economic Development, Policy Analysis Division. Data collected in conjunction with the U.S. Department of Energy monthly reporting system for petroleum suppliers, Form EIA-782C.

13. ibid.

14. See Appendix D, p. 10.

15. Based on Minnesota 1984 population of 4.16 million and total state gasoline consumption of 1.94 billion gallons in 1984.

16. Minnesota Pollution Control Agency, "Koch Refining Crude Expansion Project, Draft Environmental Impact Statement," 1985, p. S-1.

17. U.S. Department of Energy, "Petroleum Refineries in the United States and U.S. Territories, January 1, 1981," pp. 13, 20.

18. Minnesota Department of Energy and Economic Development, Policy Analysis Division.

19. National Petroleum News 1985 Factbook, pp. 44-45, 48-49.

20. U.S. Department of Energy, "Weekly Petroleum Status Report," 1979 and 1985 issues. Average of monthly refinery utilization percentages.

21. U.S. Department of Energy, "Petroleum Supply Annual" (various years), annual average refinery utilization estimated by dividing an average of initial and year end refinery capacity by average crude inputs.

22. ibid.

23. U.S. Department of Energy, "Petroleum Supply Annual, 1984," pp. 41, 66.

24. Minnesota Pollution Control Agency, op.cit. p. S-1.

25. U.S. Department of Energy, "1984 Annual Energy Outlook," p. 213.

26. Based on Marketshares and Individual Company Data for U.S. Energy Markets, 1950-1982, published by API, pp. 72-79 and DOE, Petroleum Supply Annual, 1984, pp. 100-1, 105.

27. Minnesota Department of Energy and Economic Development, Policy Analysis Division. U.S. Department of Energy, EIA-782C.

28. ibid.

IV. PETROLEUM DISTRIBUTION

A. *Description of Distribution Segement of the Petroleum Industry*.

The petroleum distribution industry operates between the service station pumps and the refineries. The distributors are generally known as "jobbers" and they purchase and load petroleum products at refineries or pipeline terminals and sell and deliver these products to service stations, homeowners and industrial customers. Jobbers can be small operators with one truck or large operations with their own storage facilities and many trucks. It is essential to understand that jobbers conduct business in a style that usually has multiple products and extended product lines. It is a distortion to consider them only in the context of their gasoline products. For a more complete discussion of this subject see page 37.

The discussion in this section will be limited to considering the distribution of gasoline, primarily to retail gasoline outlets. Jobbers purchase gasoline from supply companies at prices below the price paid by dealers. The differential between the dealer and jobber buying prices is commonly called the "jobber margin." This margin focuses on the jobber's role as an intermediary between the suppliers, (refineries or pipeline terminals) and retail outlets. In addition to using jobbers to distribute through what is known as the indirect distribution system, many refiners directly distribute gasoline themselves in at least some markets.

i. The Indirect Distribution System.

There are many different methods for the distributon of gasoline from the refinery to the service station. Most petroleum companies deliver at least a portion of their products directly rather than rely on jobbers. In 1981, 39 percent of all sales in Minnesota were direct and 61 percent were through jobbers. The remainder of this section will focus on the jobbers indirect distribution system.

Branded Jobbers And Their Retail Networks:

Some jobbers deliver the products of only one petroleum company and are, hence, known as branded jobbers. When a company is marketing its products as branded to sell through Amoco stations, the jobber can not, for example, purchase the gasoline from Mobil. Branded jobbers often own service stations, which they may directly manage or lease to dealers. They may also distribute gasoline to open dealerships (retail outlets owned by the dealer).

Unbranded Jobber and Chain Store Marketers:

Unbranded jobbers can obtain their gasoline from any supplier of unbranded product. However, they can not sell this product as branded gasoline. An unbranded jobber will generally search for the supplier offering the lowest price. Unbranded jobbers often will own unbranded stations which are typically convenience stores or pumper stations which sell only gasoline. Unbranded jobbers that own and operate a chain of unbranded stations are often referred to as retail chain marketers.

Multibranding:

Some branded jobbers supply branded and unbranded gasoline from more than one petroleum company, although they can not mix gasoline for branded sales with gasoline from other supply companies. For example, a multibranded jobber might purchase gasoline from an Amoco supplier for distribution to Amoco service stations and obtain unbranded gasoline from another supplier for delivery to its own unbranded station. Some jobbers also distribute branded gasoline for more than one supplier.

Jobber Diversification:

As noted earlier, jobbers are not limited to supplying petroleum products to service stations. They tend to be entrepreneurs. They may sell fuel oil or propane to individual homeowners and commercial customers. Jobbers may own service stations, or a string of stations and might own other related services. Jobbers owning service stations typically offer automobile repair services, tires, batteries and auto accessories. Other possibilities include convenience stores, specialty repairs and services (quick oil changes, car washes, tuneups, etc.), distribution of diesel fuel, ownership of truck stops or sales of heavy fuel oil. In short, the jobber industry is noted for its diversity.

ii. Gasoline Pricing at the Wholesale Level.

There are three general types of wholesale gasoline prices; prices paid by jobbers, prices paid by retail dealers and prices for commercial customers (farmers, fleet operators, etc.). Each

of these prices include different costs, depending on variations in contractural arrangements.

Dealer Tank Wagon Price: (Dealer Buying Price)

The dealer tank wagon price (DTW), the price paid by dealers includes all costs to the terminal plus transportation to the dealer as well as storage, credit and other distribution costs. Branded dealer buying prices have historically included costs for advertising, credit cards and (for lessee dealers) outlet maintenance and station rental, but there has been a move toward charging the dealer separately for these costs in recent years. For example, a per gallon charge for franchisor advertising may be itemized separately and many dealers currently pay a flat monthly charge for station rental. Some companies charge their dealers variable rents or provide rent rebates based on sales volume.

Another complicating factor affecting the DTW price is the size and location of the retail outlet. Larger volume service stations and convenience stores may receive 8,000 gallon transport truck loads direct from the terminal. Smaller retail outlets must pay a somewhat higher price, sometimes referred to as the jobber DTW, because they only have adequate storage for smaller deliveries made by jobber tankwagon trucks. In addition, pricing arrangements in the Twin Cities can be different from the rest of the state. In the metroplolitan area many suppliers distribute directly to retail. In the non-metroploitan area they primarily distribute through jobbers.

The retail price that the dealer charges is something above the DTW price, producing a dealer margin. From the dealer

margin the dealer pays rent, labor and other station operating costs. Any remainder is profit.

Rack Price (Terminal Price):

Prices for sales to jobbers at the terminal are often referred to as "rack" or terminal prices and include the upstream cost of bringing the product to the terminal (crude acquisition, refining, transportation charges, overhead, etc., plus profit). If the jobber resells gasoline to its lessee dealers (stations owned by the jobber but operated by a franchisee), the jobber's margin is confined to the difference between the terminal and DTW price the jobber charges the dealer. By utilizing company-ops, rather than lessee dealers, a jobber earn increased profits from having both the jobber margin and the dealer margin to work with.

In general, supply companies that emphasize unbranded gasoline sales tend to have slightly lower rack prices than suppliers of branded gasoline. Suppliers sometimes sell unbranded gasoline to jobbers on a spot basis. Branded gasoline is only supplied on a contractual basis.

Wholesale Prices to End Users:

Wholesale prices paid by end users depend on the volume of their purchases. At one extreme, companies and governmental units with large vehicle fleets and trucking firms, with a large number of lighter gasoline powered trucks, may pay little more than rack prices plus the cost of delivery to their storage facilities. The largest consumers may even be able to establish contracts with supply companies at slightly lower than rack

prices. At the other extreme, farmers and other small consumers that receive gasoline deliveries can pay much more than even low volume retail outlets, depending on their location and the volume of their purchases.

iii. The Companies Distributing Gasoline in Minnesota.

Six of the leading petroleum companies in Minnesota are companies that maintain branded retail networks. As the table on the next page indicates, different companies use different strategies for getting their product to the retail level. These companies are all large integrated petroleum companies. (It is noteworthy that they all rely on supply arrangements with local refiners for much of their local supplies, except for Amoco.) When sales of their affiliated jobbers are included, each of these six companies distributes over three percent of gasoline in Minnesota, according to information provided by the Lundberg Survey, Inc. As a group they account for 39 percent of state sales.

A significant portion of the remaining 61 percent of gasoline sales are distributed through chain marketers (Food-N-Fuel, Holiday, Q-Petroleum, 7-11, Tom Thumb, etc.) and individually owned convenience stores. Ashland distributes gasoline produced at its local refinery through approximately 80 company owned large volume SuperAmerica convenience stores in Minnesota. Also included are cooperatives and their jobbers (Cenex, Land O' Lakes, Farmland) and other suppliers with smaller distribution operations (eg. Murphy, Kerr McGee). Unbranded commercial accounts are a small portion of the business.

TABLE D-1

JOBBER UTILIZATION BY MAJOR REFINERS IN MINNESOTA

PROFILE OF COMPANIES WITH SIGNIFICANT SHARES OF GASOLINE DISTRIBUTION IN MINNESOTA, 1984

Leading Distribution Companies (Lundberg Survey)[a]	Nearest Refinery[b]	National Profile: Branded Stations In Minnesota	Percent of Branded Stations Supplied by Jobbers	Domestic Refinery Crude Inputs	Domestic and Foreign Crude Production (Thousands Barrels/Day)	Total Branded Stations	Ranking by Total Assets
Amoco	N. Dakota	610	69	897	812	15,700	5
Ashland	Minnesota	83	73	302	22	1,910	24
Conoco[c]	Oklahoma	183	NA	NA	358	5,100	15
Mobil	Texas	431	46	636	769	13,900	2
Phillips	Texas	412	98	288	268	9,700	10
Texaco	Kansas	258	80	946	2,376	19,600	3
Union	Chicago	308	70	351	235	10,400	13
Other Companies with over 100 Retail Stations							
Cenex	Kansas	319	0	NA	NA	NA	1,067

Source: 1985 National Petroleum News Factbook, pages 14-15, 35, 48-51. "Oil and Journal 400," Oil and Gas Journal, September 9, 1985, pages 102-103. Location of nearest refinery is from U.S. Department of Energy, "1984 Petroleum Supply Annual," pages 100-105.

[a] Based on market share information prepared by Lundberg Survey, Inc. The companies listed have market shares of over three percent of all gasoline sales sold in Minnesota. The list may exclude one or more local or regional petroleum companies. Total sales for these companies are sometimes under represented in Lundberg Survey's market share reports.

[b] Nearest refinery with pipeline access to Minnesota.

[c] Data on retail outlets affiliated with Conoco is from 1983. Data on crude production by Conoco is taken from "Oil and Gas Journal 400," Oil and Gas Journal, September 9, 1985, pages 102-103. According to the "1984 Petroleum Supply Annual," Conoco operates refineries in the U.S. with total crude distillation capacity of 430,000 barrels per day.

iv. Why Use the Indirect Jobber Distribution System?

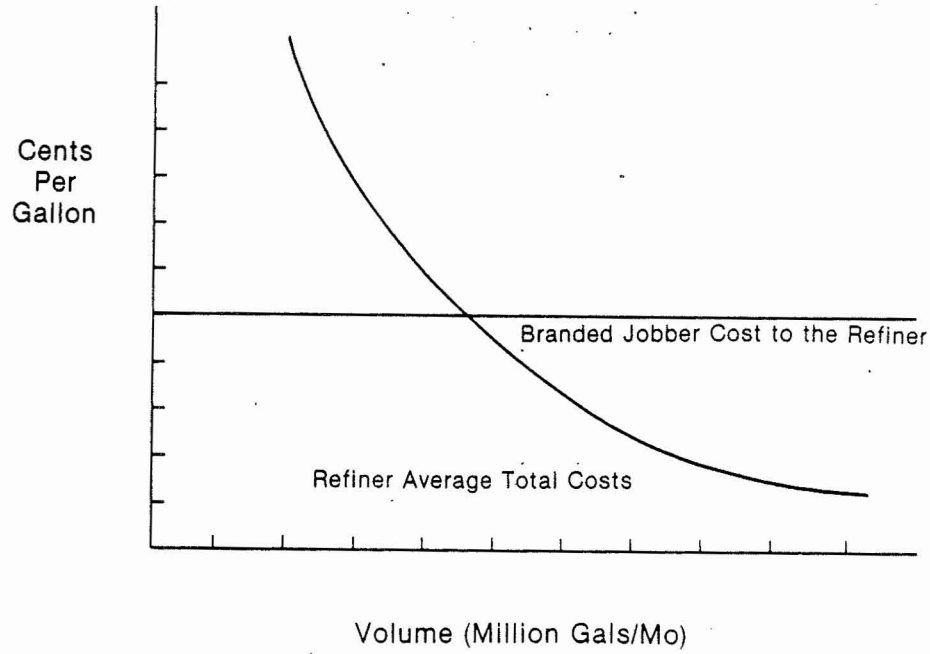
The decision of a refiner to distribute gasoline directly as opposed to distributing gasoline through jobbers is based upon economics, but other factors come into play and often can be decisive. This section presents material from a 1984 draft report published by the U.S. Department of Energy, entitled Deregulated Gasoline Marketing: Consequences for Competition, Competitors, and Consumers, that includes a description of the economics of the gasoline distribution industry.

The choice of the distribution channel is based upon the costs of distribution not only for the refiner but also for the jobber. The refiner must decide whether it is more profitable to distribute the product itself or to let someone else do it.

If the refiner decides to integrate forward by distributing the gasoline directly, its costs are made up of fixed costs and variable costs. As volume increases, the fixed cost component per gallon decreases, bringing down total cost per gallon (or average total cost). At some point the average total cost becomes small enough that it may become more profitable for the refiner to use its own direct distribution channel rather than sell the product to the jobber. For example, if the refiner can successfully maintain a margin of four cents per gallon between its DTW price and average rack prices the refiner's per-unit cost has to drop below four cents per gallon before it can distribute gasoline to retail outlets at a profit.

FIGURE D-2

DIRECT DISTRIBUTION WHOLESALE COSTS VERSUS WHOLESALE MARGINS



The jobber's distribution cost curve may differ from the refiner's. At lower volumes, the jobber's cost curve is usually below the refiner's cost curve. At higher volumes, the jobber's cost curve may be about the same as the refiner's, or above or below, depending upon the jobber and the refiner.

There are several reasons why the jobber's cost curve may be different. The jobber may be a multibranded distributor, buying product from more than one refiner. While the jobber's purchases from each refiner may be relatively small, overall its purchases may be large. Therefore, it may be able to attain economies of scale by building volume across several brands. Another reason for the different cost curves may be that the jobber is distributing more than one type of product. The jobber might be distributing fuel oil, gasoline and diesel. By building volume across fuel types, the jobber may be able to increase its distribution economies. Remember that by limiting the analysis to gasoline only we are only providing a partial picture of what is ocurring to the jobbers overall business.

Different management structure may be another reason why the jobber can have lower costs. The jobber may be more likely to have fewer marketing personnel, lower administrative expenses, lower employee benefits, wages and lower taxes.

Finally, the jobber may be able to use its localized management to its favor. The jobber's management usually is located right in its marketing area, permitting them to know the nuances of the local market and to respond quickly to change. Jobbers are frequently a source of innovation in the petroleum

marketing industry as they experiment with new ways of meeting the needs of their local markets.

The refiner's management more typically is layered. While local offices may exist, managerial decisions often are made in some remote city, several layers up the management structure. Decisionmaking time is lengthened, and local familiarity may be lost as managers become removed from the local environment. Increasing volume in an area may push the incentives toward the direct channel, since the refiner may be willing to locate management in the area.

As volumes grow for the refiner in a particular marketing area, the per-unit cost differences between the jobber and the refiner may become less important or disappear. As the refiner's unit costs approach those of the jobber, the refiner has the choice to distribute the product itself or to rely upon the jobber. Market consolidation often brings with it increased volume in the consolidated market as the refiner concentrates more of its resources in smaller areas in order to sell its products. This implies it may become increasingly more economic for the refiner to market directly than to market indirectly.

The refiner must evaluate the trade-offs involved among the various distribution channels, and may choose different strategies in different markets. For example, in predominantly rural areas, a refiner may find its distribution costs so high to any directly supplied network that the jobber system works best. In more concentrated suburban and ubran areas, the economics of distribution may make the directly supplied network more profitable, with some breakdown among company stores,

lessee dealers and open dealers. The marketing strategies of refiners indicates that this jobber-directly supplied split between rural and suburban-urban is often the optimal distribution system.

Refiners have different strategies for utilizing direct versus jobber distribution. These are three examples of different strategies. Mobil distributes directly to 54 percent of its branded stations in the United States. Phillips Petroleum, another company operating in Minnesota, uses jobbers to distribute gasoline to 98 percent of its branded stations. Koch Refining is an example of a different strategy altogether. The company is a principal source of unbranded gasoline in Minnesota but distributes no gasoline directly to local retail outlets and does not maintain a network of affiliated jobbers.

B. *Trends*.

The gasoline marketing industry has been affected by the two most important changes in the petroleum industry during the last six years; decontrol and major alterations in consumption. The resulting changes have affected the economics of both refiners and jobbers and, hence, have resulted in significant changes in the industry.

i. Changes in Demand: Alteration in Gasoline Consumption.

Highway gasoline consumption patterns have undergone major shifts over the past decade. Annual gasoline consumption increased consistently throughout the post World War II period. Even the first oil price shock of 1973 only temporarily stopped the consistent increases in highway gasoline consumption. However, gasoline consumption peaked in 1978 and has declined so

much since then that highway gasoline consumption in 1982 was less than in 1973. These changes are attributable to many factors, the most important of which are the rapid increase in gasoline prices and the resulting decrease in vehicle use and fuel economy improvements. The changes in gasoline consumption have produced ripple effects throughout the gasoline marketing industry and more broadly throughout the oil industry.

ii. Unbranded Versus Branded Sales.

The changes in gasoline consumption have produced ripple effects throughout the gasoline marketing industry. Along with rising prices, brought in part by OPEC price setting, came changes in the retail market. The growth of self service stations came in part as a response to increased prices. Retailers saw convenience store operations as a possible solution to eroding profits resulting from limited supplies and decreasing margins. These new retail forms became a factor in the market for unbranded gasoline. Petroleum jobbers have had to contend with this major change in their industry.

iii. Market Withdrawals By Petroleum Companies.

During the decade of controls, withdrawals and expansions were extremely difficult to pursue. Oil companies either were unable to withdraw because of complex rules regarding station supply or withdrew very slowly as they found replacement suppliers. Even if a company sold outlets, it still had a supply obligation to the stations that were sold. With the lifting of controls in 1981, many companies were able to implement decisions that had been made years before. Companies have withdrawn from areas where they had small market shares or

indirect and costly sources of supply. In turn, companies have concentrated in areas with larger market shares, better brand identity, better stations, and more efficient, less costly supply.

Four supply companies, including Champlin, Gulf, Shell and Texaco, withdrew their marketing operations from Minnesota between 1978 and 1984. Jobbers supplied by these companies were faced with trying to find new supply companies in order to stay in business.

iv. Direct Distribution Versus Indirect Distribution.

Throughout the price control period of the 1970s, jobbers were able to expand their operations more easily than refiners because of procedures in the allocation regulations and other regulatory provisions. As a result, the jobber share of marketshare rose consistently thoughout the 1970s and into the 1980s. Jobbers expanded their operations out of their more traditional rural marketing areas into many suburban and urban marketing areas. Refiners could not easily counter this trend and often were reluctant to do so because jobber expansion was the primary way refiners were able to expand marketing opportunities. Between 1972 and 1981 the jobber share of Minnesota's petroleum distribution market increased from 47 percent to 61 percent and the jobber share of the national market increased from 43 percent to 56 percent.

As a result of these trends, in many markets throughout the country there has been an increasing overlap between refiners attempting to market through directly supplied channels and through jobbers. The traditional overlap has been between one

refiner's jobber (or indirect network) and another refiner's direct network. More recently, the same refiner's indirect jobber network may overlap with its direct network due to the increase in jobber market shares during the 1970s. This type of overlap in particular has been a potential source of conflict and tension.

The National Oil Jobbers Council (NOJC) published a marketing survey of their membership for 1982. This survey broke down the areas in which jobbers operated. Overall, 54 percent operated in rural areas. But more significantly, 64 percent of the jobbers considered to be motor fuel distributors operated in rural areas and only 36 percent operated in urban-suburban markets. For the larger jobbers, the gasoline retail chain operators, 67 percent operated in urban-suburban markets, with 32 percent in rural markets. Thus, there was, and still is, a significant overlap between jobbers and especially retail chain operators and refiners in urban-suburban markets. As a result, it is likely that changing marketing strategies of the refiners will conflict with the marketing goals of the jobbers. In a market with declining or stagnant demand, there is likely to be some exit from the urban-suburban markets from both the jobber and refiner ranks.

c. *Impact of Decontrol on Jobbers*.

Few major refiners have been left out of the push for volume or out of changes in their relations with jobbers. One consequence is that refiners are reevaluating whether it is more profitable to market through a directly supplied channel or through wholesalers. In cases where a refiner attempts to

increase its emphasis on direct distribution, there is a potential for conflict between the refiner and jobbers, particularly its own jobbers in market areas where the refiner distributes directly.

Jobbers have also been affected by refiners withdrawing from many market areas in an effort to consolidate their operations. If a refiner withdraws from a market, the refiner does not require a jobber to market in that area. The jobber which loses its supplier through a refiner's withdrawal may be left in a precarious situation. Unless the jobber finds another refiner which wants the jobber to act as a marketer for it, or unless the jobber decides to sell unbranded product, the jobber will have to merge, be acquired by existing jobbers, or go out of business. Recent evidence provided by the National Oil Jobbers Council (NOJC) indicates that the jobber is more likely to merge or be acquired by existing jobbers than go out of business. The situation described in this paragraph may be one reason why jobbers increasingly are going multibranded. Securing more than one supplier provides some assurance of continuous operations if one refiner withdraws.

i. Reduced Jobber Margins.

As table D-2, p. 100, indicates, decontrol, declining consumption and other trends combined to significantly reduce jobber margins between 1980 and 1983. The table shows the margin between average DTW and rack prices in the U.S. for regular gasoline. The fact that the margins reflected in this data fell sharply in early 1982 suggests that decontrol played a key role in this trend. Again note, regular gas accounts for a relatively small share of the jobbers gasoline products.

TABLE D-2

NATIONAL JOBBER MARGINS BASED

ON BLS PRODUCED PRICE INDEX FOR LEADED REGULAR GASOLINE

(Cents Per Gallon)*

1980-1983

Month	*1980*	*1981*	*1982*	*1983*
January	*4.4*	*4.4*	*4.2*	*2.2*
February	*4.1*	*4.5*	*4.7*	*2.3*
March	*3.6*	*4.4*	*4.5*	*1.6*
April	*3.3*	*4.3*	*2.5*	*1.1*
May	*2.8*	*4.6*	*1.6*	*0.9*
June	*3.2*	*4.8*	*2.0*	*1.4*
July	*3.3*	*4.8*	*2.2*	*2.0*
August	*4.0*	*4.3*	*1.3*	*2.1*
September	*4.0*	*4.2*	*1.6*	*1.8*
October	*4.3*	*4.5*	*1.3*	*1.9*
November	*4.2*	*4.6*	*1.2*	*1.8*
December	*4.2*	*5.2*	*1.9*	*2.5*
Average (nonweighted)	*3.8*	*4.6*	*2.4*	*1.8*

* - Margins calculated as the difference between dealer and wholesale buying prices as reported in Producer Price and Price Indexes, published by the U.S. Department of Labor, Bureau of Labor Statistics (BLS).

Source: "The Impact of Decontrol on Gasoline Wholesalers and Retailers," by Robert Fenili as printed in the spring 1985 issue of Contemporary Policy Issues, published jointly by the Western Economic Association International and California State University at Long Beach.

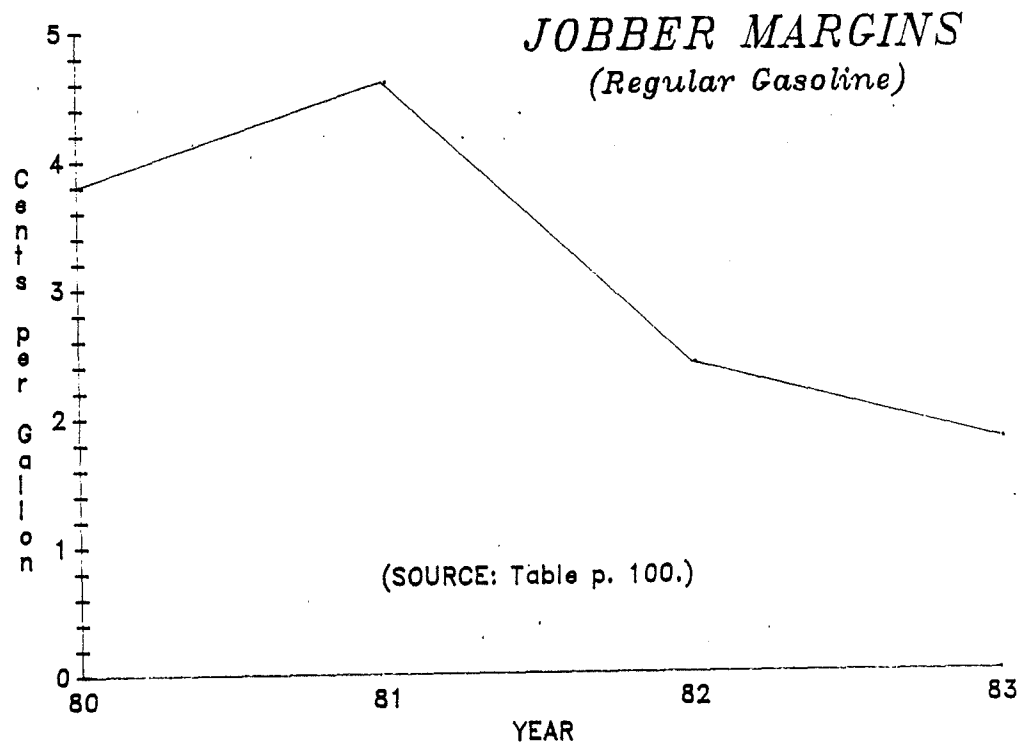


TABLE D-3

FINANCIAL TRENDS OF GASOLINE MARKETERS

(1979-1984)

	Rate of Return (%)	
	Assets	Equity
1979-1980	7.7	19.9
1980-1981	7.0	18.6
1981-1982	4.3	10.6
1982-1983	4.3	10.7
1983-1984	4.0	9.7

Source: Cooley, Philip L., Financial Characteristics of Petroleum Marketers, Petroleum Marketing Education Foundation, Bethesda, MD., 1984, (Exhibit 2) as printed in the spring 1985 issue of Contemporary Policy Issues, published jointly by the Western Economic Association International and California State University at Long Beach.

ii. Reduced Jobber Profitability.

In theory, the removal of price regulations should have decreased jobber profitability and induced exit from the industry. The evidence presented in Table D-2, p. 100, is consistent with this hypothesis, but other data support it as well. Table D-3, p. 101, summarizes profitability data from a recent study of the Petroleum Marketing Education Foundation, based on surveys of medium to large petroluem distributors. These data include firms engaged in large-scale retailing but are drawn primarily from wholesalers. The periods 1979-1981 and 1982-1984 can be called "control" and "decontrol" periods, respectively.

The data are consistent with the contention that profitability fell after decontrol. The margin data of Table D-2, p. 100, show that profitability held up fairly well in 1981, but then plummeted in 1982 and continued to fall through 1984. The National Oil Jobbers Council estimates that approximately 1,000 jobberships disappeared as a result of bankruptcy or merger in the six months preceding October 1982. According to the Petroleum Marketers Association of America (PMAA), there were about 15,160 jobber companies at the end of 1982. This number has decreased by about 20 percent to about 12,000 jobbers as of 1985. Most of the approximately 3,160 jobbers who have disappeared since the end of 1982 are believed to have merged with others or sold out.

Despite the fallout already taken place, many marketers and refiner-supplier executives believe there is more to come. A recent PMAA survey of refiner-suppliers, marketers, association

executives and industry observers, 98 percent of the respondents predicted the fallout will continue for years to come. See Table D-4 for predictions about the number of jobbers remaining after two, five and ten years.

TABLE D-4

PREDICTED DECLINES IN NUMBER OF JOBBERS

(Number remaining; percent decline from 1985 population.)

YEAR	Marketers	Refiners	Association Executives	Industry Observers
1987	10,705 (11%)	10,886 (10%)	10,700 (11%)	9,938 (17%)
1990	8,905 (26%)	9,685 (19%)	9,311 (22%)	8,313 (31%)
1995	7,811 (35%)	8,972 (26%)	8,277 (31%)	7,072 (41%)

(Source: Petroleum Marketers Association of America as reported in National Petroleum News, August 1985.)

In sum, the data presented in Table D-3, p. 101, and the data on exits offer further support for the contention that decontrol has resulted in decreased jobber profitability.

D. *Jobber Marketshare*.

The absolute numbers of a particular type of business only provides a partial picture. Information about marketshare is also needed to profile trends in the marketplace.

Unfortunately, there is no data available about jobber marketshare since decontrol. During the period of price and allocation controls, jobber marketshare increased, see p. 138. While many jobbers have gone out of business since decontrol, others have expanded. Since decontrol, it is believed that net jobber marketshare has declined.

E. *Summary*.

The petroleum market saw major changes during the 1970s. During this time prices increased dramatically causing demand to decline and contributing to the increase in convenience stores and discount pumper stations. The resulting decline in demand affected the economics of the entire industry. However, federal price and allocation controls restricted normal reactions by the marketplace to these changes in market conditions. Decontrol by the Reagan Administration in 1981 intensified the market forces resulting from the changes that occured in the 1970s and petroleum jobbers have been affected by the impact of those forces. It is reasonable to expect further changes as the market continues to adjust to new realities.

V. Gasoline Marketing Trends

This section will focus on the observable trends in petroleum marketing. These trends will be presented in the context of the contemporary debate about competition in the industry. The issues easily become confused because the terminology and concepts frequently overlap.

This chapter is organized into four sections. The first three sections focus on areas of the industry that are frequently introduced into the competition debate. The final section discusses measures of competition.

The first section is a discussion of the service station population trends. In section B, trends in the relative distributions of retail marketing styles are presented. The third section presents changes in the ownership and control of retail outlets. The section examines company-ops compared to lessee-dealers in some detail. The fourth section discusses measures of marketshare concentration as measures of market competitiveness.

There will be two recurring themes throughout this section. One, the relevant time periods must be considered, pre-1981 and 1982 to present. Two, as in the preceding sections, it is important to scrutinize the quality of the data.

A. *Service Station Trends*

Nationally, the number of service stations has decreased in the range of 40% in the past 15 years. While no one knows exactly how many there were to begin with, nor do they know how

many there are now, most sources have reported trends with about the same direction and magnitude. This anecdote from the Lundberg Letter illustrates the service station population problem. In a article entitled, "The Wild, Blue Unknown", the Lundberg Letter opines:[1]

> *Many a pick has been broken in attempts to count the gasoline station population. Not only is the total obscure, but some major and other large oil companies do not even have a reliable count of their own branded outlets.*
>
> *A case in point. A top research analyst for a major oil company comments, "When management or the board ask us how many stations we have, we have to say we don't know."*

Service station population trend estimates provided by several sources will be presented in the next few pages. These estimates clearly demonstrate that there is a change in the type of retail outlets used in the gas and repair industries.

Policymakers should be aware that it is important to be knowledgeable about the shortcomings of the U.S. Department of Commerce census data because it is the only primary source for many types of data in this industry. Most secondary sources for information, (e.g. trade magazines), report Department of Commerce data second hand in their tables and graphs.

To properly use this data, the reader must know that the Department of Commerce classifies a businesses on the basis of its income source. To be a Census Bureau service station one must derive 50% or more of one's income from the sale of gasoline and oil products. Consequently, most convenience stores are <u>not</u> counted as service stations. Likewise,

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1. - Lundberg Letter, October 8, 1982, p. 5.

businesses for which auto repairs are not at least 50% of total revenue are not counted as repair businesses, e.g. Sears. In short, the Census Data will under-report the actual number of firms engaged in both gasoline retailing and auto repair by a very significant, but unknown, amount. Likewise, all related census data such as sales, revenues and number of employees will be under-reported.

In November 1984 the American Petroleum Institute petitioned the governments to change its census definitions so that the census data would be more reflective of the true marketplace in their industry. The Commerce Department reports no plans for significant changes in the upcoming 1987 business census.

Consequently, policymakers would be well advised to exercise discretion when considering any facts based on Census Data for the gasoline or auto repair industries for the foreseeable future, or until such time as major changes in their definitions are made. Likewise, they should appropriately filter secondary sources that manipulate or reproduce Department of Commerce Data.

The following Census Data is appropriate for observing the direction and magnitude of trends. It displays trend data for service stations, general repair shops and speciality repair shops.

TRENDS

******

SERVICE STATIONS versus SERVICE SHOPS

For Firms With Payroll

Subject to Federal Income Tax *

	Number of Establishments				Annual Payroll (in 1,000's)				Total paid employees			
FOR MINNESOTA	1967	1972	1977	1982	1967	1972	1977	1982	1967	1972	1977	1982
Gasoline Service Stations	3,257	3,787	2,800	2,230	39,094	63,918	82,361	103,809	12,666	17,657	15,277	13,321
General Automotive Repair Shops	436	460	487	566	5,090	8,339	16,057	27,352	1,014	1,358	1,669	2,060
Specialty Shops:												
Electrical and Fuel System Services	na	16	20	24	na	335	667	1,304	na	46	68	103
Radiator Repair	na	31	25	29	na	436	872	1,166	na	62	89	79
Glass replacement and repair	na	39	48	70	na	2,037	3,873	4,496	na	244	265	284
Brake, Front End, and Wheel Alignment	na	43	33	32	na	1,720	2,197	3,062	na	185	167	180
Exhaust System Services	na	11	12	36	na	479	1,084	2,362	na	49	80	144
Transmission Repair Shops	na	22	69	58	na	522	2,172	3,769	na	78	194	226
Other Automotive Repair Shops	na	11	9	30	na	379	875	2,071	na	39	51	152
TOTAL (repair shops)	na	633	703	845	na	14,247	27,797	45,582	na	2,061	2,583	3,228

(Source: Dept. of Commerce Census of Service Industries and Retail Trade)

* - At best these figures provide a sense of the rapid changes in the industry. No further manipulations of these data can be undertaken that would provide useful information about the current trends. In addition to the problem with definitions, the 1982 census did not include data for all firms due to an error by the IRS. Consequently, this data for establishments with payroll does not accurately profile the business trends in question. For example, the 1972 census reported there were 4,585 service stations total but only 3,787 with payroll. Similarly, in 1977 it reported there were 3,280 total and 2800 with payroll.

NOTE: This type of information is displayed for each Regional Development Commission in Minnesota in Appendix D.

This data indicates that service stations have been a declining retailing style in the past five to ten years, while both types of repair shops have been experiencing significant growth.* It appears that the rate of decline in the number of service station may be slowing, but note that this is based upon information prior to deregulation in 1981. Reliable data is not available for the period since deregulation.

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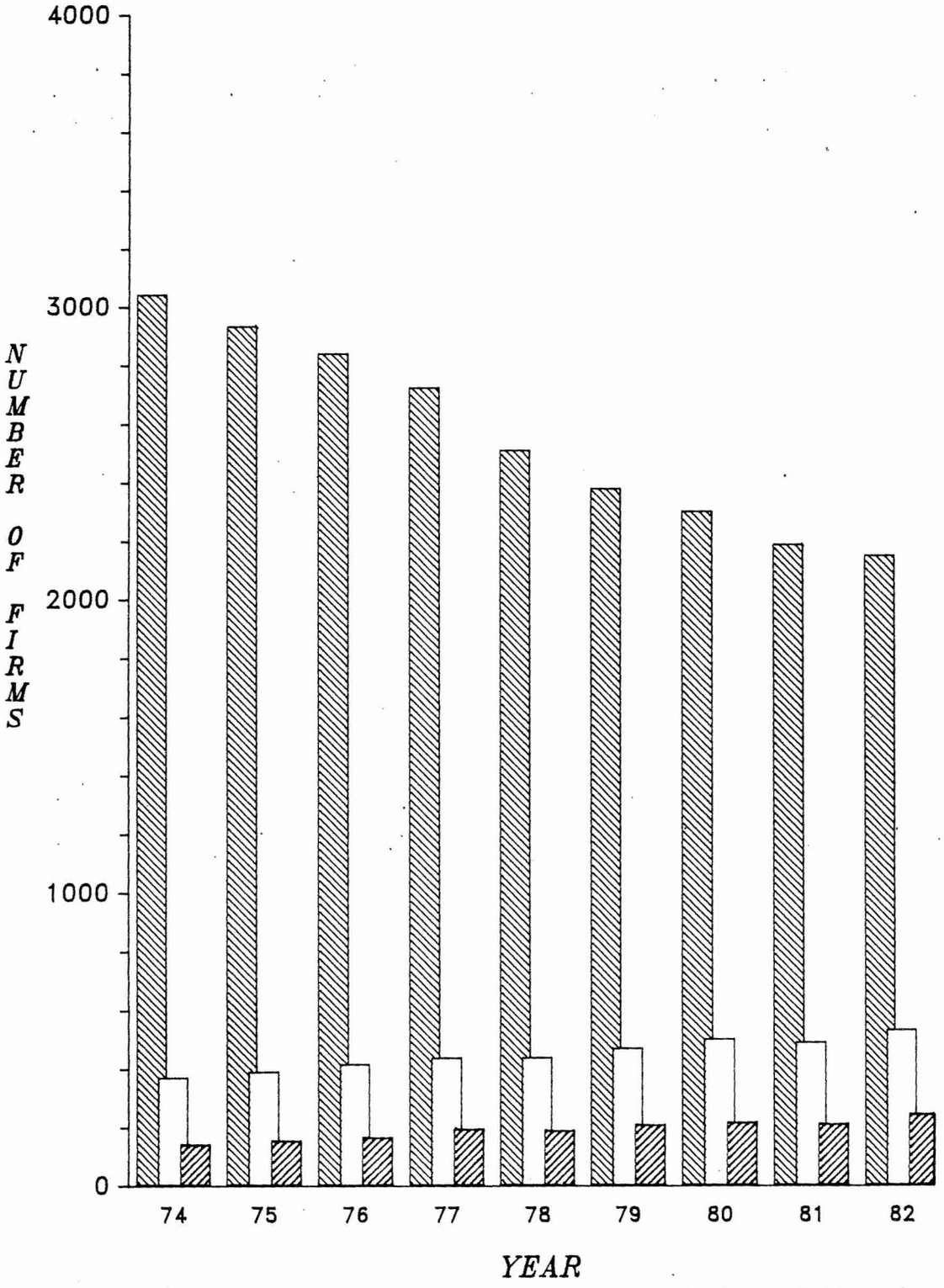
* - This data source would tend to have missed information about small "Mom and Pop" establishments that had no payroll and the firms for which gas sales or repairs were not at least 50% of their revenue. The best guess is that service stations have declined at a similar or faster rate than those firms with payroll. Meanwhile, a number of new gasoline sellers arrived in the market in the form of convenience stores that are invisible in these data.

For the repair firms, the increase is probably understated. The one person repair garages that operate without payroll and/or for cash have proliferated to an unknown extent. There has also been a trend towards offering auto repair and services at major retail department stores.

CHANGES IN BUSINESS STYLES STATEWIDE MINNESOTA



(SOURCE: U.S. Dept. of Commerce, County Business Patterns)

Next, data from the Minnesota Department of Revenue will be compared to the U.S. Business Census data for gas stations, general repair shops and speciality repair shops. The Census figures appear for the years 1977 and 1982.

No where is the data problem more clear, and more perplexing, than for General Automotive Repair Shops. Both the Census Bureau and the MN Department of Revenue use the same definitions for classification purposes, (i.e. 50% of revenue). Note, the Census Number is counts only those firms with payroll while the Revenue Number reflects all firms paying sales tax. However, the discrepancy is much greater than either agency could explain on the basis of that difference alone.

COMPARISON OF REVENUE AND CENSUS DATA FOR THE MINNESOTA RETAIL GASOLINE AND AUTOMOBILE REPAIR INDUSTRIES

FOR GASOLINE SERVICE STATIONS:						
Year	*1974*	*1977*	*1980*	*1982*	*1983*	*1984*
Revenue Number[a]	*4516*	*3983*	*3296*	*3099*	*3101*	*3068*
Census Number[b]		*2800*		*2230*		
Volume[c]	*187,882*	*230,190*	*192,613*	*247,991*	*302,92*	*321,869*
GENERAL AUTOMOTIVE REPAIR SHOPS:						
Revenue Number	*2166*	*2532*	*2651*	*2672*	*2739*	*2857*
Census Number		*487*		*566*		
Volume	*39,057*	*60,556*	*89,604*	*100,887*	*110,759*	*129,092*
SPECIALTY REPAIR SHOPS:						
Revenue Number	*228*	*252*	*238*	*233*	*240*	*260*
Census Number		*216*		*279*		
Volume	*5,540*	*8,593*	*11,528*	*15,102*	*17,343*	*18,978*

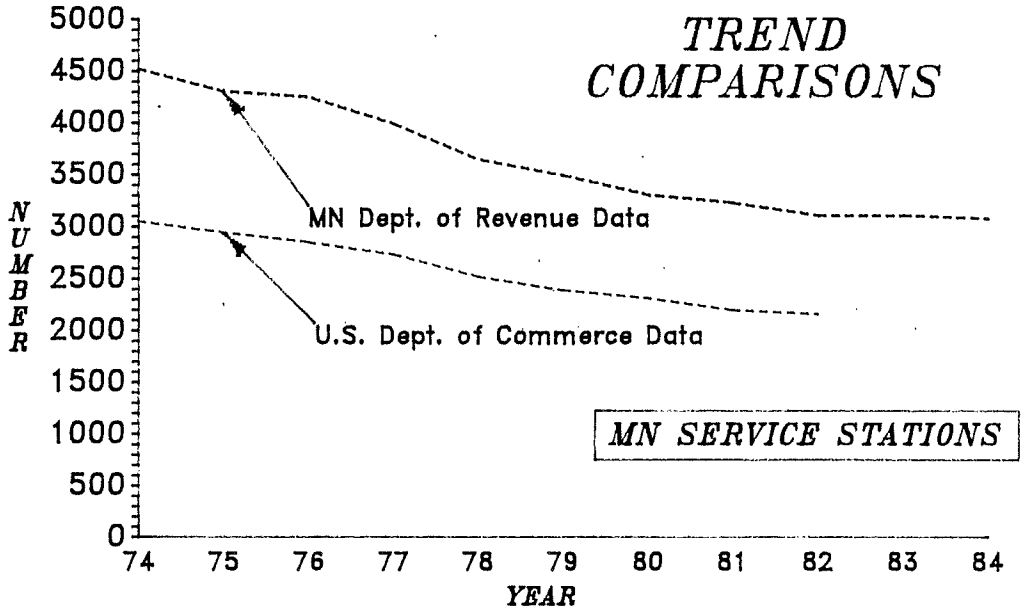
a - Revenue Number equals number of firms with a sales tax license; businesses self-classify for sales tax purposes, i.e. they select which standard industrial classification (SIC) they will use for record keeping purposes.

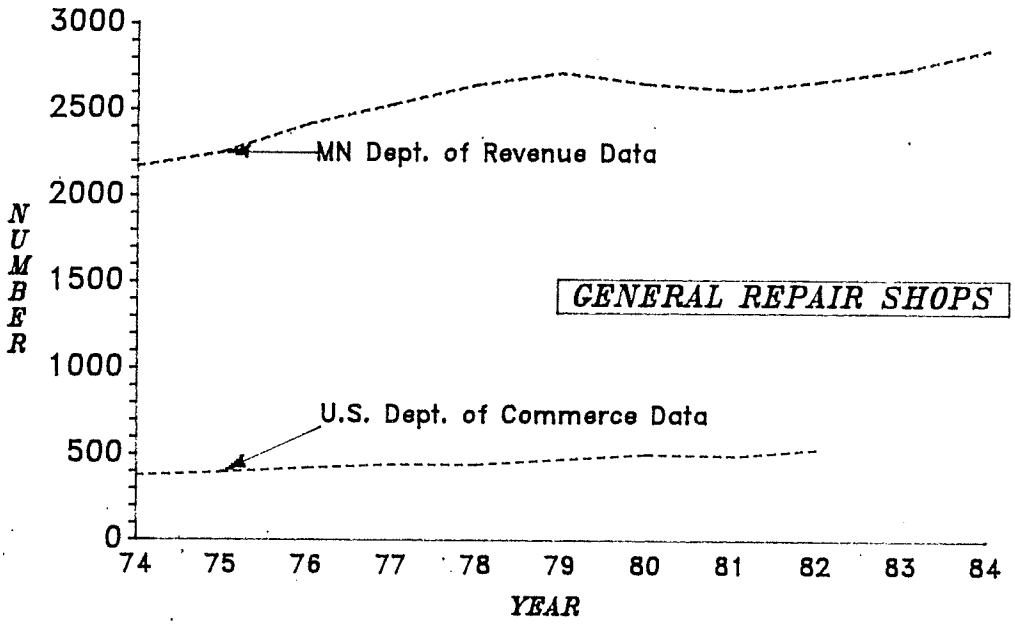
b - Census Number equals number of firms with payroll; Census assigns classification code.

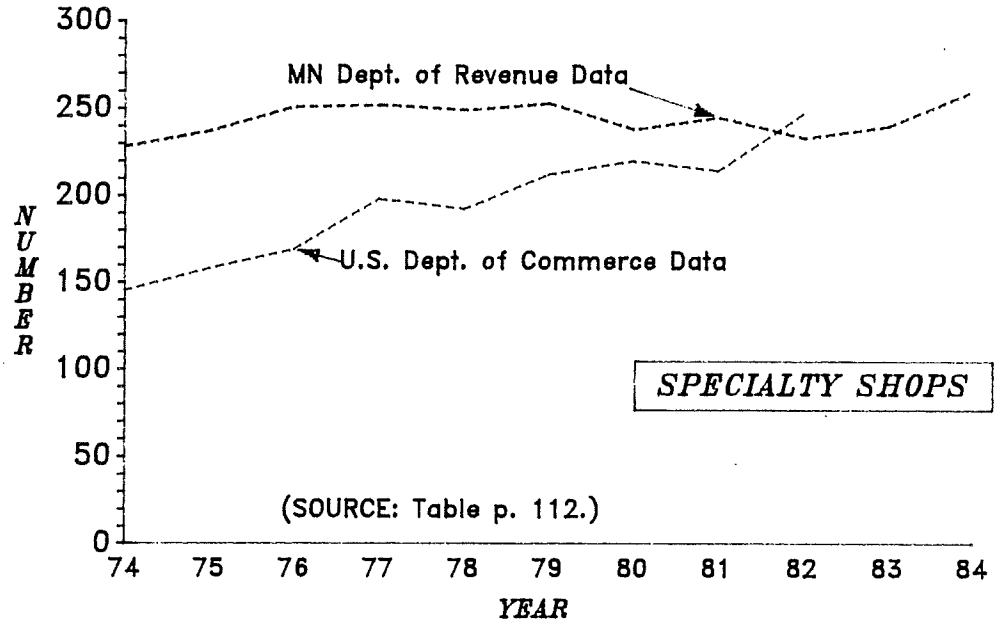
c - Volume equals taxable income stated in millions of dollars as defined by MN sales tax statutes and as reported by the MN Dept. of Revenue. (nominal dollars)

(SOURCE: Minnesota Department of Revenue; Sales Tax Records)

TREND COMPARISONS

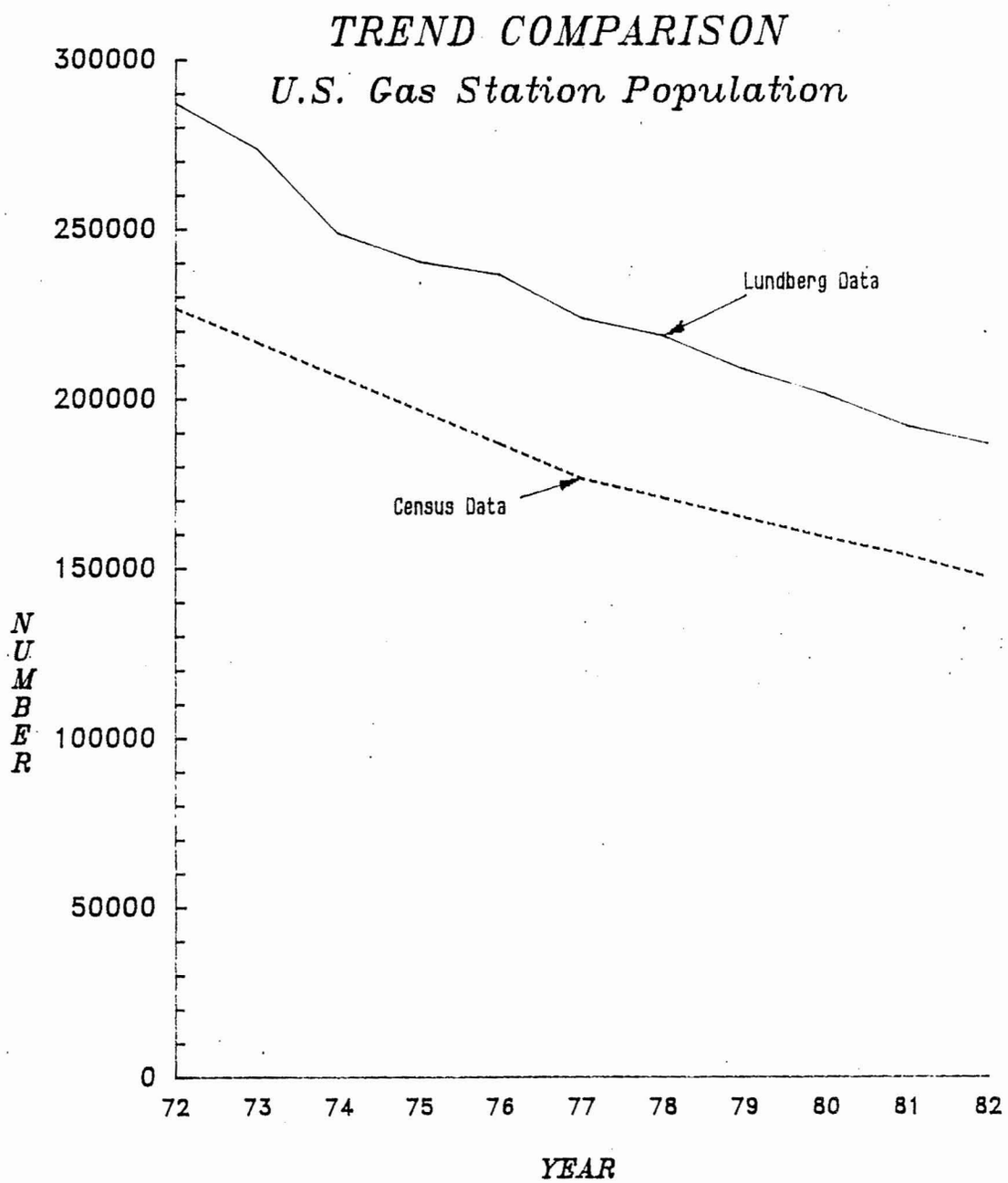






(SOURCE: Table p. 112.)

The national trends for the service station population prior to decontrol in 1981 indicate that Minnesota's experience is typical. It is the Lundberg Letter's opinion that there are significantly more service stations than the census data indicate. However, both the Lundberg data and the Department of Commerce Business Census data indicate similar trends.



(SOURCE: U.S. Dept. of Commerce, Retail Business Census; Lundberg Letter, October 8, 1982.)

The American Petroleum Institute (API), the oil producer's trade organization, publishes data on the trends in stations closed versus stations built. Again, this is not a perfect source of data. However, it provides a third source to verify the direction and magnitude of the service station trends. It does not include new businesses opened on a dormant service station site. It does not count stations as closed unless the reporting company states they have no plans to re-open them as gas stations.

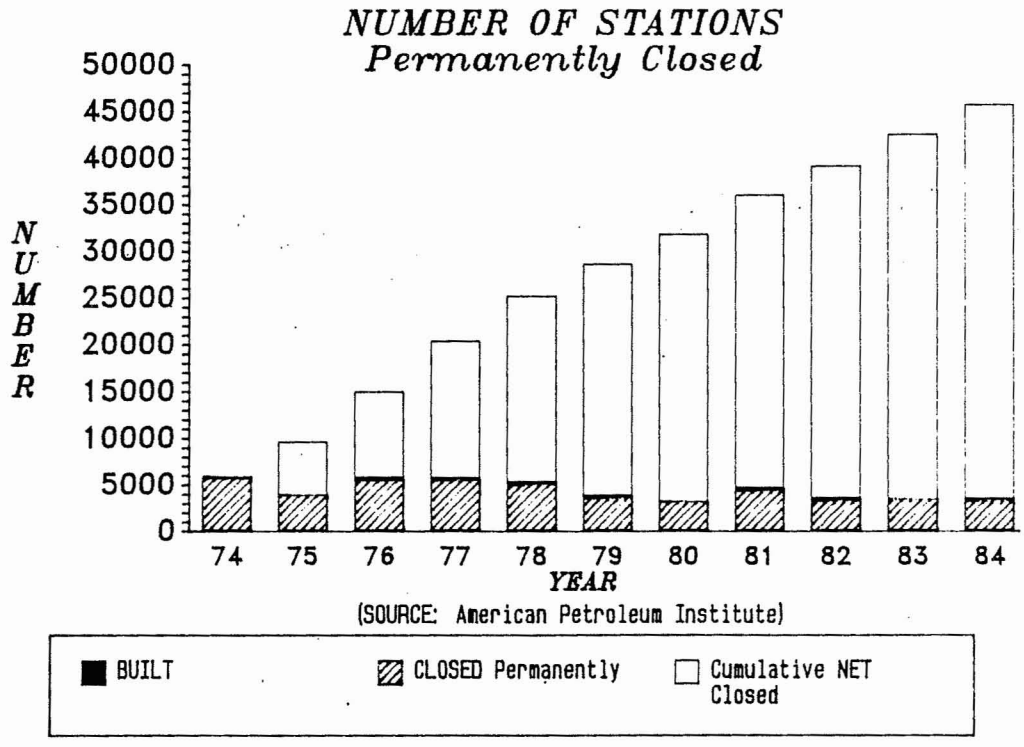
This API data indicates that there were 45,834 fewer buildings being used as gas stations in 1984 than 1974. By way of comparison, the U.S. Department of Commerce data indicate there were 65,110 fewer service stations in business at the end of the same period. Comparing these two data sources allows us to conclude that closures have been of the magnitude of fifty thousand.

API REPORT OF
NEWLY CONSTRUCTED SERVICE STATIONS OPENINGS
AND PERMANENT CLOSINGS*

Year	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	NET TOTAL
Permanently Closed	6,041	4,127	5,676	5,683	5,138	3,724	3,380	4,538	3,433	3,647	3,420	
Built	206	206	319	284	353	286	169	341	326	225	258	
Net Permanently Closed	5,835	3,921	5,357	5,399	4,785	3,438	3,211	4,197	3,107	3,422	3,162	45,834

(SOURCE: American Petroleum Institute, New Construction Report, May 1984.)

* - API definitions: A service station is defined as a retail outlet at which 50% of the dollar volume is from gasoline and related products; a newly constructed outlet is defined as one that has been erected completely on vacant land or is new on the site. This category does not include rebuilds. Permanently deactiviated outlets are those where equipment and identification have been removed, and where re-opening as a service station is no longer contemplated.



In summary, there has been a significant decrease in the number of traditional service stations in Minnesota and nationwide. Simultaneously there has been an increase in the number of general repair and specialty repair businesses. The best documentation for these trends is for the period prior to decontrol. Based upon the limited data available for the past couple years, it appears that these populations might be stabilizing at their new levels.

These trends can be interpreted to say that the market is undergoing significant change. Service stations are being displaced by high volume gasoline outlets. Service stations are being displaced by auto repair businesses. Such change could benefit or harm the consumer. Such change could reflect healthy competition or unfair competition. The fact that the service station population has experienced a significant decline is a neutral fact. Measures of market competitiveness will be presented at the end of this chapter. The following chapter discusses the impact on the service and repair industry.

B. *Gasoline Retailing Styles.*

The next section will provide a description of the trends for the various types, or styles, of gas station outlets. In the debate there is frequently a concern raised that the decline in the number of service stations will adversely affect the quality and availability of service and repairs. This section will illustrate that there is no reason to conclude that the changes in retailing styles are resulting in consumer problems.

The impression is that there are many new retail styles evolving in the industry. One industry observer suggested that, on the contrary, we have gone full circle and it is once again time to call businesses that sell gas "filling stations" and businesses that repair cars "garages."

> *Despite the many changes in gasoline marketing in the last fifty years, there have been no new gasoline distribution methods. In fact, today's stations are in many ways reintroductions of station types that existed before 1930. The full-service gas station corresponds to the old-fashioned repair shop that sold gasoline; the contemporary self-service station calls to mind the early bulk station; the modern convenience store, with gasoline pumps, directly parallels the dry goods store that sold gasoline. Today's most advanced petroleum distribution methods are actually time-tested techniques. We have come full circle.*[2]

There is general agreement that the retail market has seen a radical increase in the popularity of self-service gasoline sales. Customer preference for self-service has increased from nearly nonexistent in the 1960's to 50% in 1980, and it reached 71% in 1984.[3] Within this trend, there has also been a trend

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2. - Vieyra, Daniel I., "Fill'er Up", An Architectural History of America's Gas Stations, Macmillan Publishing Co., Inc., New York, 1979.

3. - op. cit., 1985 National Petroleum News Factbook.

towards gasoline sales at convenience stores (C-stores) and through high volume outlets that sell gasoline only (Pumpers). Minnesota industry experts noted that as of today, the convenience store market may be saturated and that new gas only pumper outlets are rare. It is possible that the market has stabilized after the shake-out following decontrol.

The graph below displays the change from 1977 to 1984 for the relative population of each type of outlet. The relative gains made by convenience stores have come from traditional service stations and pumpers alike. Recall that overall, the number of marketers is decreasing. In light of common perceptions about a proliferation of convenience stores, their relatively small number is noteworthy.

RELATIVE NUMBER OF OUTLETS BY STYLE OF RETAIL OUTLET FOR U.S.

Year	Service Stations	Pumpers	C-Store	Other/Misc.
1977[a]	*51%*	*30%*	*3%*	*13%*
1982[a]	*44%*	*29%*	*11%*	*15%*
1984[b]	*47%*	*28%*	*11%*	*13%*

a - Source: Lundberg Letter, September 2, 1983, p. 1
b - Source: 1985 National Petroleum News Factbook, p.116.; Primary Source cited: study performed by MPSI Americas, Inc., Tulsa, Okla.

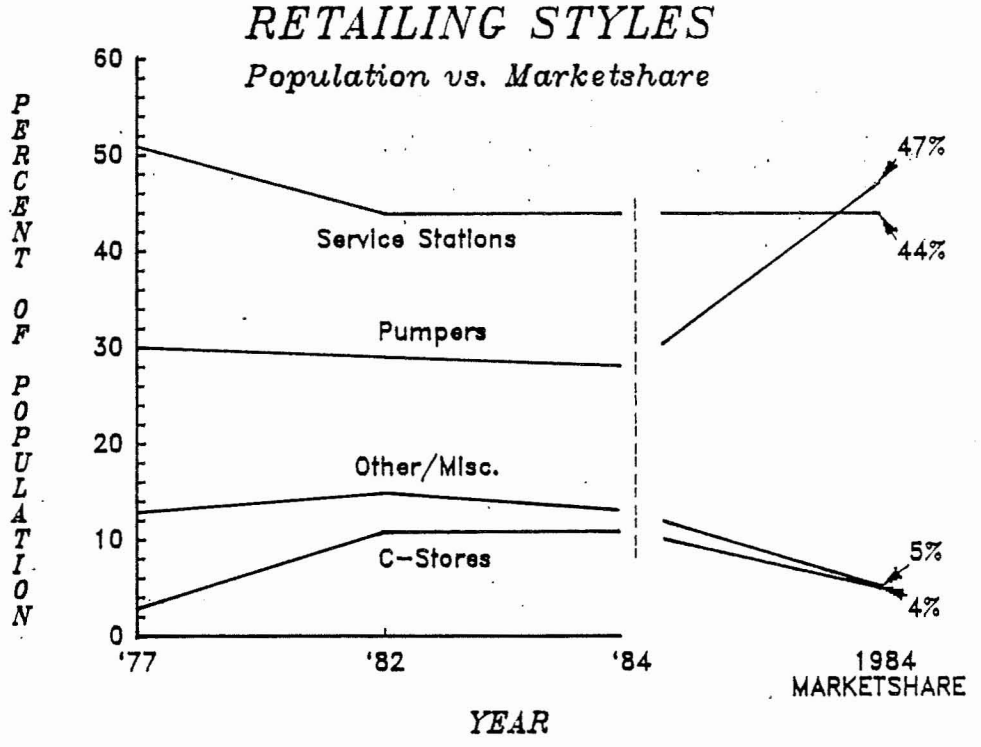
Relative marketshare is the data needed to place this population information into a useful perspective. Relative marketshare data for one year only, 1984, is displayed next. Recent trend data was not located.

There is widespread agreement that C-Store market share has been increasing. But note that it is still only 5%. The noteworthy item here is that pumpers sell almost 50% of the gas sold at retail. There is general agreement that pumper market share has been increasing. From this we could conclude that the market share of traditional service stations has been going to pumpers not convenience stores. Data on the magnitude of the shift could not be located.

RELATIVE MARKET SHARE OF OUTLETS
BY
STYLE OF RETAIL OUTLETS FOR U.S.

Year	Service Stations	Pumpers	C-Store	Other/Misc.
1984	*44%*	*47%*	*5%*	*4%*

(Source: 1985 National Petroleum News Factbook, p. 116.; Primary Source cited: study performed by MPSI Americas Inc., Tulas,OK)



In summary, there have been significant changes in retail gasoline marketing styles. There has been a trend away from traditional service stations towards high volume gas only pumper stations. Convenience stores still have a small marketshare.

Has the decline in the number of service stations created a problem with the quality and availability of automobile services and repairs? It is our conclusion it has not. The critical variable in services and repairs is the supply of trained mechanics. In addition to conducting general research, we conducted a consumer survey to determine how well consumer expectations were being met. We found no evidence of existing problems. Some experts expressed concern about potential problems. See the services and repairs chapter for a more complete discussion.

c. *Ownership/Control of Retail Outlets.*

This section will discuss ownership and control of retail outlets. There are allegations that the major refiners are using their company-ops to drive the lessee-dealers out of business. Allegedly, the major refiners are trying to take control of the gasoline retailing level of the industry. To understand this debate it is important to understand the types of ownership and control that prevail at the retail level of the industry and their respective trends. This section will present a description of both the ownership/control types and trends. It will also discuss the preceding allegations.

At the outset, it is important to understand that information about ownership and control of retail gasoline outlets is sketchy. This section will attempt to provide information about ownership and control that will allow the decision-maker to, euphemistically speaking, be in the right ballpark. Precision is absolutely beyond the limits of available data. Some of the problems in using Department of Energy (DOE) marketshare data will be briefly presented.

First, a state's political boundaries in many cases may not reflect actual economic markets. State level data aggregations may fail to provide, or may mask, significant data about market behavior. All DOE data we encountered was collected at the state level.

Additionally, recent DOE marketshare data from 1983 to present may have inaccuracies of as much as 40% for a given state. The errors can be in either direction, either

overstating or understating. There were also problems of overstatement, of unknown magnitude, prior to 1983. They result from problems with the data collection system. Generally, states should not be compared to each other using DOE marketshare data. See Appendix C for a more detailed discussion of data limitations.

The preceding section discussed styles of retailing. Using those retail categories one could generalize that pumpers and convenience stores tend to be refiner company-ops. Traditional service stations tend to be operated by dealers who lease the physical plant and operate under a franchise from a major refiner. This is true both in Minnesota and nationally.

In this section the categories for discussing ownership and control issues will be company-ops* and lessee-dealers. To start the discussion, it is helpful to know which refiners market use company-ops and which use lessee-dealers.

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* - It is important to note that company stores are not necessarily run by the handfull of fully integrated major oil companies. A "company-op" can be any retail outlet that is owned and operated by the company that supplies it with product. It is very important to be aware of the definition being used for company-ops in any given discussion.

Data sources frequently do not use the same definition of a major refiner when assembling these kinds of statistics. Current DOE data includes refiners with a capacity of greater than 250,000 gallons per day in their definition of a major refiner. This definition makes no distinction for vertical integration upstream, (i.e. significant internal crude oil production). The DOE major refiners in Minnesota include Amoco, Koch and Ashland Oil, in addition to most of the midcontinent refiners. DOE data from 1972-1981 tends to report company-ops data for all refiners. Since 1982 they report for major refiners and all refiners.

DOE, in their draft report, disaggregated the major refiner company-op data and lessee-dealer data into smaller groups. They grouped the twenty largest refiners into groups of four plus one group for all others. Using data from the P306 data collection form,* DOE compiled the following. These statistics refer only to the direct distribution portion of the market, (about 50% of the market), not the entire market.

> *... the eight largest refiners accounted for 71 percent of total lessee dealer volume versus 26 percent of total company store volume in 1972. By 1981, their share of lessee-dealer volume had increased to 81 percent and their share of company store volume had fallen to 18 percent.*[4]

There are several important statements that can be drawn from the above data (that are corroborated by numerous other sources). It is the eight largest refiners who primarily market through lessee-dealers at the retail level. It is the mid-sized and small refiners who market through company-ops. During the period 1972-1981, the eight largest refiners were not increasing their share of company-op volume.

During this 1972 to 1981 period, the total retail marketshare of refiner supplied company-ops increased from 7.8 percent to 13.1 percent while refiner supplied lessee-dealer marketshare dropped from 36.6 percent to 23.5.[5] Note that

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4. - op. cit., Deregulated Gasoline Marketing, p. 68.

5. - op. cit., Deregulated Gasoline Marketing, p. 67.

* - The P306 data had two components. One component was state-level data for the refiner's directly supplied network. The second component was nationwide data that also contains information on direct sales to end users, and sales to branded and unbranded jobbers. Only refiners reported on the P306.

these percentages do not include the large share of the market supplied by the indirect wholesaler distribution system.

The exclusion of the indirect wholesale distribution system from the data creates a problem because wholesalers market through their own company-ops and lessee-dealers. Wholesale marketing techniques will be added to the discussion later in this section. For now, let it suffice to point out that branded jobbers marketshare rose from 20.4 in 1972 to 26.8 in 1981. Unbranded jobber's marketshare rose more dramatically from 15% of total volume in 1972 to 25% in 1981.[6] Thus, wholesalers (branded and unbranded jobbers) accounted for 35.6 percent of total marketshare in 1972 and 52.1 percent in 1981. The data presented below for company-ops and lessee-dealers only accounts for retail outlets directly supplied by refiners. It does not include those outlets supplied by wholesalers; fifty percent of marketshare in 1981.

First, data on refiner supplied lessee-dealers will be presented. This will be followed by data on refiner supplied company-ops.

The refiner supplied lessee-dealer marketshare data is available only for the period of price and allocation controls, 1972-1981. DOE no longer collects data on lessee-dealers. The table on the next page displays the marketshare trends for all states for 1972-1981. The chart that follows displays regional comparative rates of change. The industry consensus is that the lessee-dealer marketshare trend continued after deregulation.

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6. - op. cit., Deregulated Gasoline Marketing, p. 67.

REFINER SUPPLIED LESSEE-DEALER MARKET SHARE

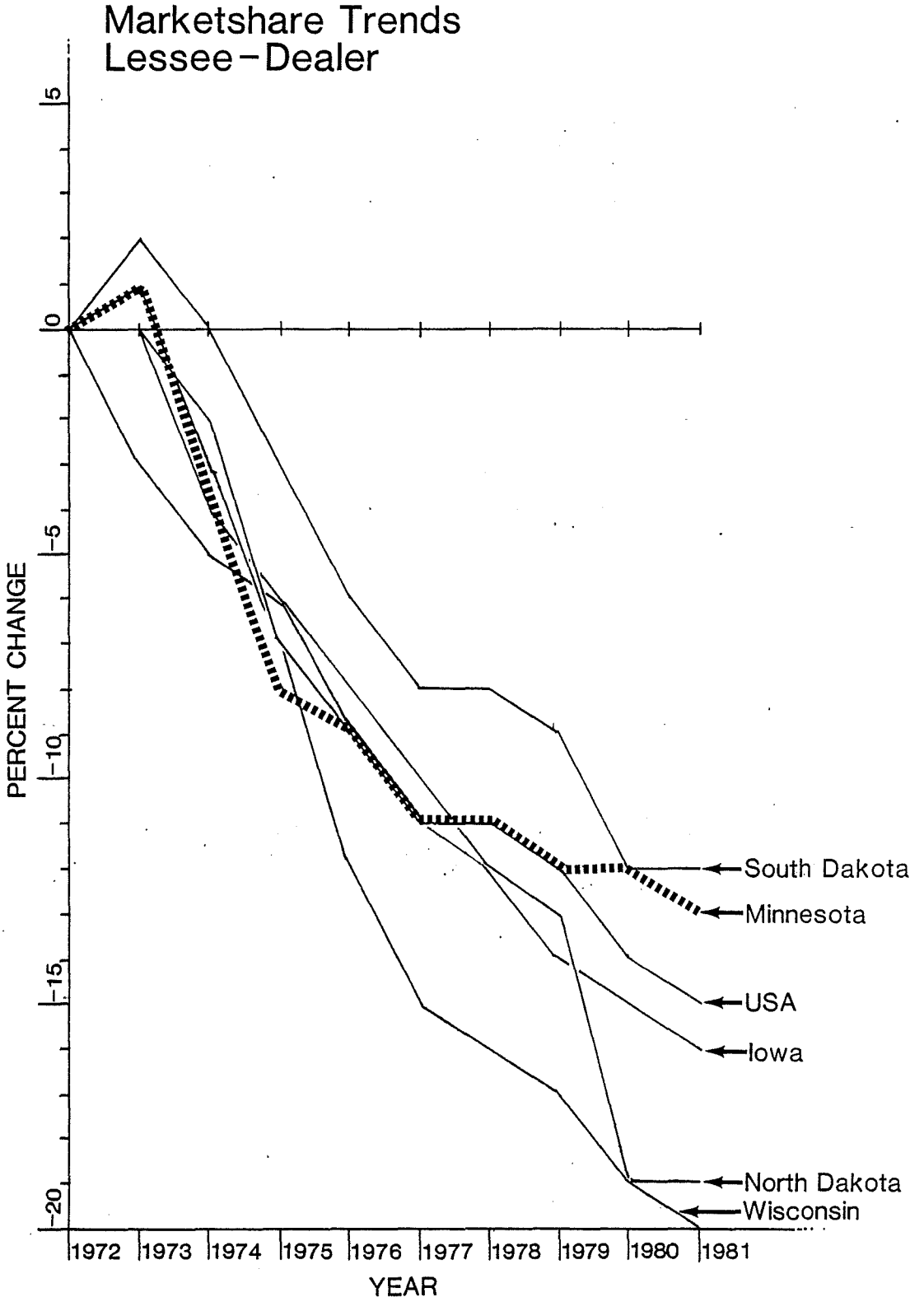
States with Decreased Share

State	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
OKLAHOMA	21 9		21 9		20 7		17 6		14	11
ARKANSAS	19	20	18	15	13	10	9	9	8	6
MAINE	25	25	23	17	15	14	12	10	9	6
NEW MEXICO	22	21	19	17	15	14	12	11	11	7
IDAHO	26	27	22	16	14	11	9	8	7	7
NEBRASKA	22	22	21	17	14	12	11	10	8	8
KANSAS	23	25	21	16	13	11	10	9	8	8
NORTH CAROLINA	16	16	15	14	13	12	11	10	9	8
MONTANA	26	25	23	22	20	20	15	11	9	9
MISSISSIPPI	18	18	18	16	14	12	12	11	11	9
UTAH	28	30	25	21	19	16	14	12	9	9
IOWA	26	23	21	20	17	15	14	12	11	10
SOUTH DAKOTA	22	24	22	19	16	14	14	13	10	10
SOUTH CAROLINA	22	25	23	19	17	16	15	14	12	10
ALABAMA	23	24	22	18	16	15	14	14	13	11
COLORADO	29	31	27	23	22	20	19	17	15	12
WYOMING	28	27	25	23	21	21	16	12	10	12
NORTH DAKOTA	32	32	28	26	24	22	20	19	13	13
TENNESSEE	26	27	26	21	19	17	16	15	14	13
TEXAS	28	30	27	23	21	19	19	17	15	14
VERMONT	29	29	28	24	22	19	18	17	16	14
GEORGIA	32	33	30	25	22	20	19	17	16	14
MINNESOTA	28	29	24	20	19	17	17	16	16	15
WISCONSIN	35	36	32	28	23	20	19	18	16	15
NEW HAMPSHIRE	32	31	30	25	23	21	20	20	21	16
MISSOURI	29	32	27	22	20	19	19	18	17	16
WEST VIRGINIA	29	29	27	25	24	23	22	20	18	16
KENTUCKY	33	33	32	26	24	21	20	20	18	16
LOUISIANA	27	28	26	23	21	21	20	18	17	17
OHIO	44	44	39	34	31	25	23	21	19	18
INDIANA	38	36	32	26	24	24	23	22	22	20
MICHIGAN	40	40	37	31	28	25	24	23	22	21
U.S.A.	38	38	36	31	29	27	27	26	24	23
ARIZONA	36	36	33	27	25	23	23	24	22	23
VIRGINIA	40	41	38	34	32	29	28	26	25	24
PENNSYLVANIA	38	39	39	36	33	31	30	28	26	26
OREGON	39	41	38	32	31	31	30	29	27	26
WASHINGTON	43	41	38	34	33	32	31	29	29	29
ILLINOIS	45	45	43	38	35	33	32	31	32	29
NEW YORK	48	47	48	45	41	40	37	35	32	30
FLORIDA	48	48	46	39	36	34	34	33	33	31
MASSACHUSETTS	44	45	43	39	38	36	36	35	35	32
ALASKA	43	40	37	48	44	41	41	33	39	33
CONNECTICUT	48	49	46	40	39	36	36	35	36	36
DELAWARE	57	58	53	44	41	40	39	38	40	36
RHODE ISLAND	43	46	46	39	40	39	40	39	37	38
CALIFORNIA	51	50	49	44	43	43	44	43	44	42
NEW JERSEY	55	55	52	51	48	48	47	46	42	43

States with Increased Share

MARYLAND	56	58	55	53	49	47	48	53	59	59
DISTRICT OF COL.	69	69	67	65	62	64	67	69	69	77

(Source: Deregulated Gasoline Marketing, p. 84)



SOURCE: Table, p. 126

Sometimes the role of major refiner's company stores gets blurred in the competition debate. Company-ops are a hot topic of debate in the industry. For that reason, they will be considered in more detail.

One major allegation in the industry is that lessee-dealers are being driven out by predatory competition on the part of the majors. This allegation generally takes the form that the major vertically integrated refiners are subsidizing their company-ops to a degree that makes it impossible for the lessee-dealers to compete. DOE found no evidence to support this allegation in their report, The State of Competition in Gasoline Marketing. DOE concluded:

> In summary, both a variety of cost-based tests for predatory pricing and examination of market share changes that would reflect the fruits of predation revealed no support for the predatory pricing hypothesis.* Most of the changes in the gasoline market during the 1970's were the result of distortions created during more than a decade of federal government regulations and changes in the economics of gasoline marketing.[7]

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7. - DOE draft report, p. 19.

* - We found no sources for the period since deregulation that provided evidence that predatory pricing was occurring. However, it is important to understand that it is not likely that there would be data documenting such behavior. DOE no longer tracks data on lessee-dealers or wholesalers. Thus, it is not accurate to conclude that no predatory pricing was occurring. The accurate conclusion is only that there was no data to support the allegations. The next section on measures of competition discusses the increases in marketshare concentration. These indicate that the so called "fruits of predation" might be in evidence since deregulation.

Three different data sources will be used to present data on company-ops. These are for the years 1972-1981, 1981-1982, and 1983-1985. It is important to be aware that the absolute levels are not directly comparable for these three data sources despite the appearance that they form a continuous data stream. However, the trend is consistent for all three sources. It is reasonable to conclude that refiner company-ops have approximately a tenth to a fifth of the market, and have generally been increasing.

The first table, the table for the period of price and allocation controls, displays data for all refiners, as does the table on page 130. These are followed by a graph displaying a regional trend comparison for all refiners. Page 133 contains a table comparing Minnesota to our region (PADD II), and to the U.S. Note that it displays data for the twenty largest refiners, not all refiners.* It is followed by a graphic display comparing the relative rates of change in company-op marketshare to the U.S., the region and Minnesota.

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* - Ashland objects to being classified as a major refiner by DOE. Their objection is based upon the fact that they have no crude reserves, making them qualitatively different than many of the other so called major refiners. If this data were reported for the ten largest refiners, this graph would likely tell a very different story.

We feel that the top ten or top eight refiners should be reported as a seperate category by DOE. There is little theoretical justification for characterizing a refining company solely on the basis of refining capacity, which is DOE's current practice. See page twenty for more information about the relative size of the major oil companies. It was beyond the scope of this study to investigate the energy reserves the various companies own nationally or internationally.

REFINER COMPANY-OP MARKETSHARE

States with Increased Share

State	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
MAINE	3	3	3	3	4	3	4	3	2	3
IDAHO	3	3	3	4	4	3	4	4	4	4
WYOMING	4	2	2	3	3	3	3	3	3	4
SOUTH DAKOTA	3	4	5	6	6	4	3	3	3	5
RHODE ISLAND	2	3	4	4	5	5	5	5	4	5
NEVADA	4	5	6	6	7	7	6	4	4	5
IOWA	4	5	6	8	8	9	8	7	7	6
MASSACHUSETTS	5	4	5	6	7	7	6	5	5	6
NEW HAMPSHIRE	4	4	3	5	6	6	6	5	4	6
UTAH	4	5	4	4	4	4	5	5	6	7
NEW MEXICO	4	5	6	8	8	8	7	6	7	7
NORTH CAROLINA	7	6	6	7	7	6	6	6	6	7
MONTANA	6	5	5	6	6	5	4	5	6	8
OKLAHOMA	5	6	6	7	8	8	8	7	7	8
ARIZONA	6	6	5	6	8	11	12	12	12	10
SOUTH CAROLINA	7	6	6	7	8	8	7	7	8	10
NEBRASKA	4	4	6	7	9	10	10	9	8	10
ALABAMA	9	9	9	11	12	11	10	9	10	11
NEW YORK	8	9	9	10	11	12	12	12	12	12
ILLINOIS	3	5	6	7	9	10	10	10	11	12
MISSOURI	5	7	7	9	10	10	11	12	12	12
COLORADO	11	11	12	14	13	13	13	12	12	12
GEORGIA	8	8	8	10	11	12	11	10	10	12
KANSAS	7	8	8	10	12	14	13	13	13	13
U.S.A.	8	9	9	11	12	13	13	13	12	13
TEXAS	8	8	9	10	11	11	12	12	12	13
FLORIDA	8	9	9	11	12	13	13	13	13	14
NEW JERSEY	6	8	9	8	10	11	11	11	13	14
MINNESOTA	7	9	10	12	14	14	13	13	15	15
VIRGINIA	9	9	9	12	13	15	16	16	16	17
WASHINGTON	9	9	9	12	13	15	16	16	16	17
PENNSYLVANIA	12	14	16	17	18	18	18	18	19	18
TENNESSEE	14	18	19	18	19	20	19	18	17	18
WISCONSIN	5	8	8	9	13	15	16	16	17	18
WEST VIRGINIA	11	12	13	17	18	18	17	17	18	19
LOUISIANA	14	15	16	19	19	19	18	17	18	19
KENTUCKY	10	11	11	16	18	19	18	17	18	19
INDIANA	11	12	13	17	18	19	18	20	21	23
MICHIGAN	8	10	10	14	17	19	20	21	22	23

States with Decreased Share

DISTRICT OF COL.	7	7	7	10	14	14	13	12	11	1
CONNECTICUT	9	7	8	9	10	10	10	6	3	1
OREGON	4	4	3	3	3	3	3	2	1	1
MARYLAND	9	9	10	12	15	16	16	9	3	2
MAINE	3	3	3	3	4	3	4	3	2	3
VERMONT	4	3	4	4	5	4	3	2	3	3
ARKANSAS	6	7	6	7	8	7	7	6	4	3
NORTH DAKOTA	5	5	6	6	5	5	5	4	3	4
WYOMING	4	2	2	3	3	3	3	3	3	4
CALIFORNIA	8	10	10	11	11	11	10	9	8	7
NORTH CAROLINA	7	6	6	7	7	6	6	6	6	7
MISSISSIPPI	11	11	10	13	13	12	12	10	8	8
DELAWARE	10	10	11	12	12	12	12	12	10	9

(Source: Deregulated Gasoline Marketing, p. 82)

ALL REFINER'S COMPANY-OPS AVERAGE U.S. MARKETSHARE*

1972-81 Annual		1981-82 Monthly		1983-85 Monthly	
	Total[a]	1981	Total[b]	1983	Total[c]
1972	7.8	January	13.7	January	14.3
1973	8.7	February	14.1	February	15.0
1974	9.1	March	14.3	March	13.6
1975	10.5	April	13.1	April	13.7
1976	11.8	May	13.6	May	14.0
1977	12.6	June	13.2	June	13.3
1978	12.5	July	13.5	July	14.9
1979	12.1	August	14.5	August	14.3
1980	12.4	September	14.1	September	14.7
1981	13.1	October	14.6	October	17.3
		November	15.0	November	15.1
		December	14.9	December	15.1
		1982		1984	
		January	15.6	January	16.6
		February	15.4	February	16.7
		March	14.9	March	16.2
		April	13.7	April	16.6
		May	12.6	May	16.2
		June	12.0	June	16.6
		July	14.1	July	16.8
		August	14.5	August	15.9
		September	14.5	September	16.6
		October	15.0	October	16.4
		November	15.0	November	16.9
		December	15.6	1985	
				January	16.9
				February	15.4
				March	16.0
				April	15.9
				May	15.6
				June	16.4
				July	16.1
				August	15.9

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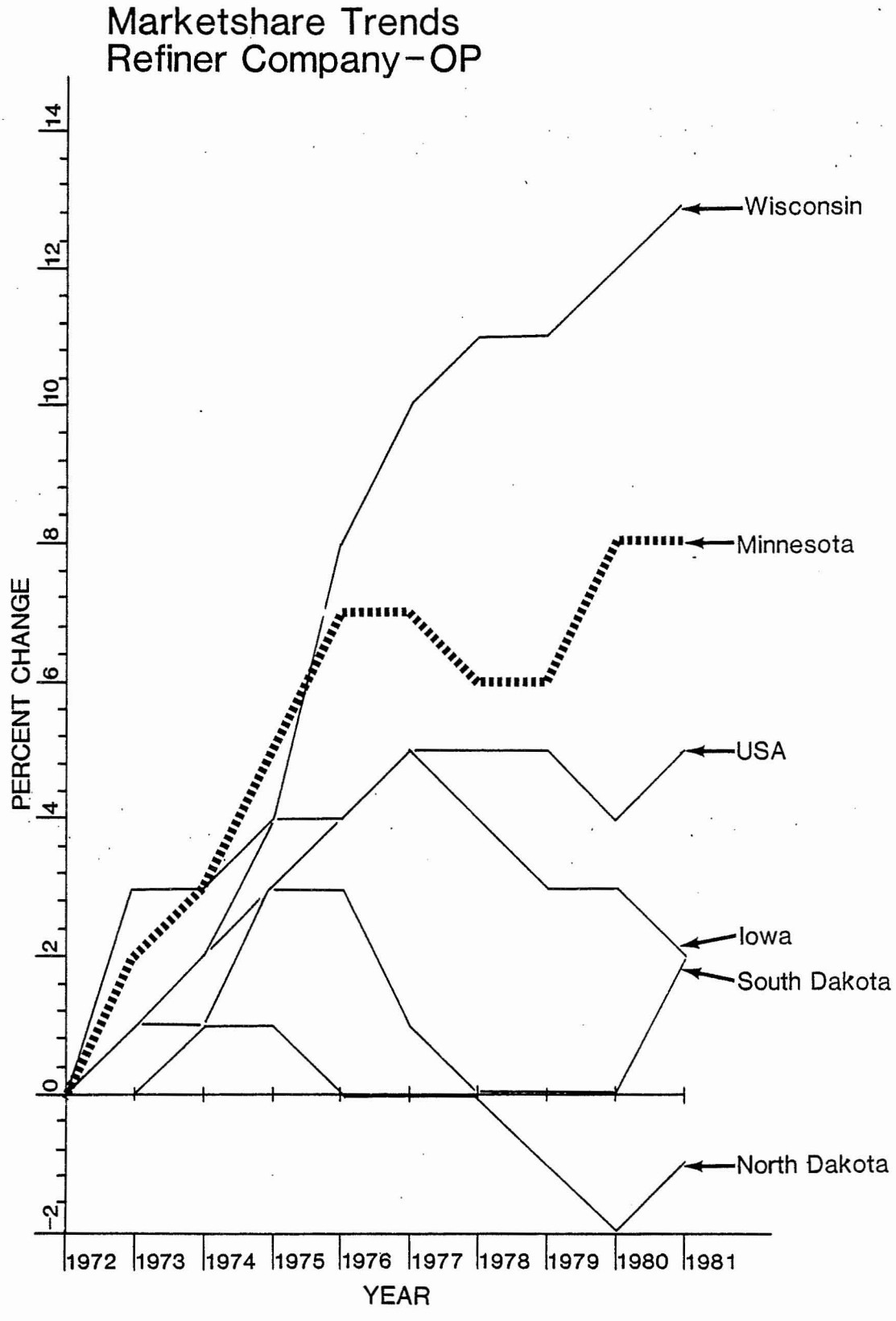
a - Source: Deregulated Gasoline Marketing, p. 67. Represents refiner supplied company-ops based on reporting by all refiners (P306 data).

b - Source: Deregulated Gasoline Marketing, p. 80. Represents refiners supplied company-ops based on reporting by all refiners (EIA-460 data).

c - Source: DOE, Petroleum Marketing Monthly (PMM), Table 62 and historical antecedent tables 52 and 39. Equals average company-op marketshare for all refiners and gas plant operators.

* - The population of refiners and gas plant operators decreased from about 270 for the P306 data to about 200 currently for the EIA-782A data. Total[a], Total[b], and Total[c] are not directly comparable. Trend directions and approximate levels are comparable using these data sources.



SOURCE: Table, p. 130

MAJOR REFINER'S COMPANY-OPS - MARKETSHARE TRENDS

	U.S.			PADD II			MINNESOTA		
	Total[a]	%Major[b]	%MarketShare[c]	Total	%Major	%MarketShare	Total	%Major	%MarketShare
January '83	14.3	63.5	9.0	21.4	60.2	12.9	18.0	78.7	14.2
February	15.0	61.3	9.2	22.7	60.5	13.7	17.9	79.5	14.2
March	13.6	62.6	8.5	19.7	61.1	12.0	15.4	78.5	12.1
April	13.7	64.2	8.8	20.4	62.3	12.7	15.6	79.4	12.4
May	14.0	65.7	9.2	20.9	60.9	12.7	16.8	79.9	13.4
June	13.3	66.4	8.8	19.7	61.1	12.0	15.8	79.8	12.6
July	14.9	63.7	9.5	21.8	61.5	13.4	16.4	79.8	13.1
August	14.3	64.7	9.3	20.5	62.8	12.9	16.5	80.0	13.2
September	14.7	65.2	9.6	21.3	63.0	13.4	17.1	80.1	13.7
October	17.3	65.0	11.0	22.3	63.2	14.1	16.9	80.0	13.5
November	15.1	63.3	9.6	22.0	22.4	13.7	17.8	79.8	14.2
December	15.1	64.6	9.8	22.4	62.4	14.0	18.0	78.4	14.1
January '84	16.6	67.2	11.2	22.6	64.3	14.5	19.9	80.5	16.0
February	16.7	66.9	11.2	23.2	64.8	15.0	19.2	81.4	15.7
March	16.2	67.2	10.9	21.9	64.5	14.1	19.1	81.5	15.6
April	16.6	68.6	11.4	22.3	65.3	14.6	17.7	80.9	14.3
May	16.2	68.6	11.1	21.2	65.0	13.8	17.9	80.9	14.5
June	16.6	68.0	11.3	22.1	64.8	14.3	18.3	80.5	14.7
July	16.8	69.3	11.7	22.3	64.9	14.5	17.2	80.6	13.9
August	15.9	68.6	10.9	21.2	64.7	13.7	16.9	80.5	13.6
September	16.6	68.6	11.4	22.5	64.4	14.5	18.5	80.3	14.9
October	16.4	69.5	11.4	21.8	64.6	14.1	17.2	80.7	13.9
November	16.9	69.9	11.9	22.4	64.6	14.5	19.1	80.6	15.4
January '85	16.9	70.8	12.0	22.7	65.1	14.8	20.3	81.6	16.6
February	15.4	70.7	10.9	20.9	65.8	13.8	18.6	82.2	15.3
March	16.0	72.3	11.6	22.3	66.3	14.8	19.1	82.9	15.9
April	15.9	72.0	11.5	21.2	65.7	14.0	18.1	82.2	14.9
May	15.6	72.1	11.3	21.1	66.3	14.0	17.6	81.5	14.4
June	16.4	70.4	11.5	22.0	66.6	14.7	18.9	80.8	15.3
July	16.1	71.6	11.5	21.7	66.8	14.5	17.9	81.4	14.6
August	15.9	71.4	11.4	22.5	66.2	14.9	19.8	81.6	16.2

a - Total equals average company-op marketshare for all refiners and gas plant operators. Source: DOE, Petroleum Marketing Monthly (PMM), Table 62 and historical antecedent tables 52 and 39.

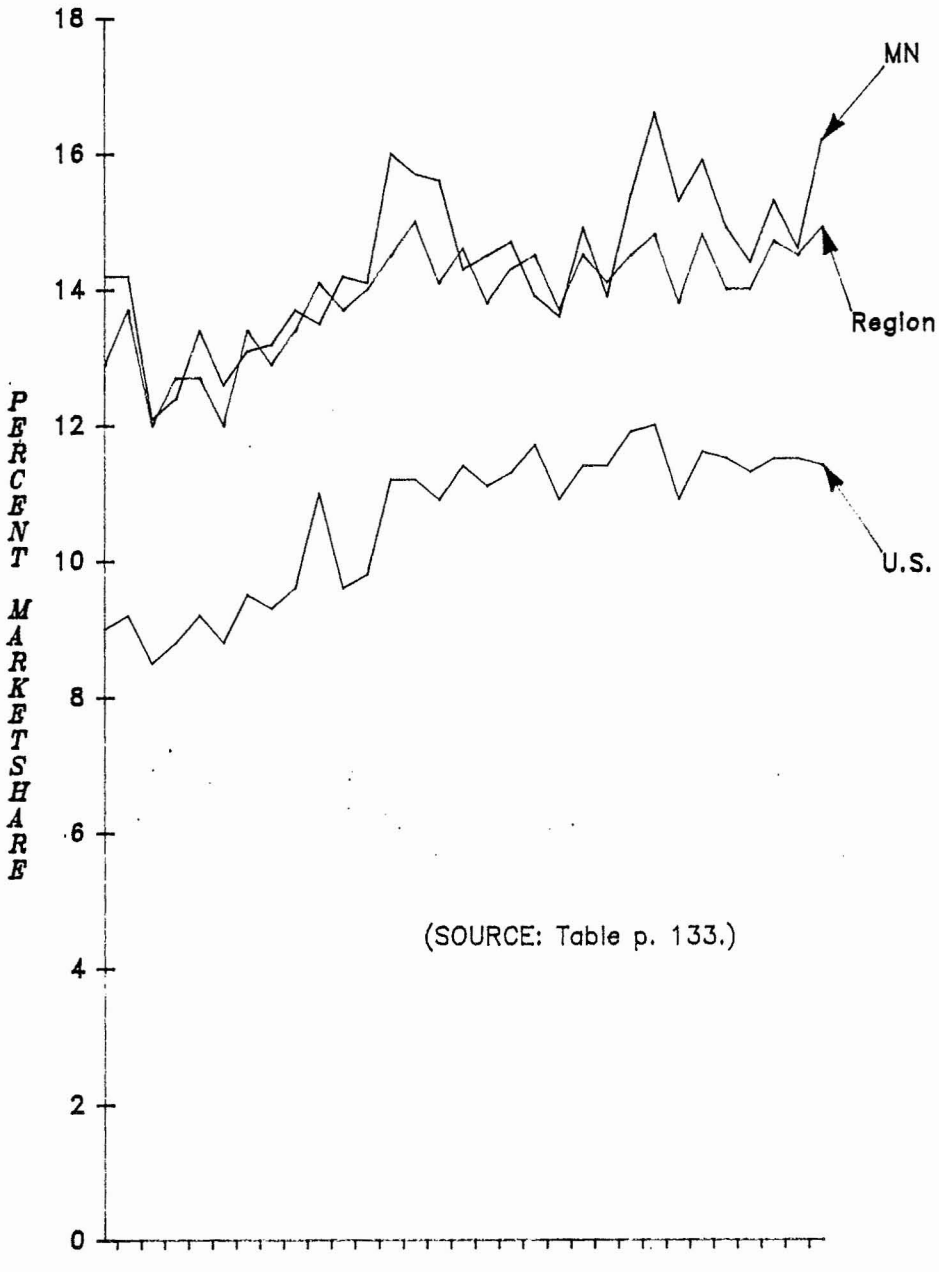
b - %Major equals major refiner's company-op marketshare of all refiner's company-ops. Source: DOE, PMM, Table 60 and historical antecedent tables 50 and 37.

c - %MarketShare equals major refiner's company-op marketshare. (Total x %Major = %MarketShare)

COMPARATIVE TRENDS

MAJOR REFINERS' COMPANY–OPS

Marketshare Changes



(SOURCE: Table p. 133.)

January 1983 to August 1985

Major refiner's company-ops are a politically sensitive area in the industry. All of the actors understand that there are significant stakes riding on both the actual and the apparent behavior of the company stores, particularly the majors' company-ops.

The Lundberg Letter collects voluntary data on company-ops. In an edition devoted to the subject, they stated the following.

> *Although good data (on company-ops) are included for each major oil company, several sources hesitated to even discuss the matter due to the great sensitivity of the subject. As one executive put it, "Legal departments are swamped with legislation -- the threat of divorcement of major oil companies from direct retail involvement." There's a groundswell of resentment of the majors on the part of independent dealers, one source said: "They are trying to accuse all refiners of driving them out of business via company-ops." Even the small increase in the number of majors' company-ops this year has assumed the spectre of a tidal wave.*[8]

Since company-ops are so sensitive, why would the majors pursue them? Later in the same issue, the Lundberg Letter goes on to speculate about one politically motivated marketing strategy behind the major's company store tactics.

> *Another reason ... is ... due to the threat of states' legislation to divorce major suppliers from retail marketing; some say the majors are jockeying for safe position in the market, "grandfathering" with company-ops before legislation. (author's emphasis)*[9]

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8. - op. cit., Lundberg Letter, p. 3.

9. - ibid., p. 6

Another explanation is that major refiners company-ops are motivated by simple economics. This explanation contends that the industry has changed to the point that there is not room for a wholesale mark-up and a retail mark-up. The industry is squeezing out the profit of one middleman. It is the wholesaler in some cases. It is the lessee-dealer in other cases.

In this explanation, marketshare taken from the lessee-dealers would theoretically be going to the branded wholesaler marketing through their own company-ops or be going directly to the refiner's company-op. Marketshare from the branded wholesalers driven out would go to lessee-dealers supplied directly by the refiner or to the refiner's company-ops.

Unfortunately, there is no direct data on these phenomenon. The next section will discuss the branded jobber, the great gap in the data base.

MINNESOTA GASOLINE DISTRIBUTION SYSTEM

REFINER

DIRECT NETWORK		*INDIRECT NETWORK*	
COMPANY-OP	**LESSEE-DEALER**	**JOBBER**	**RETAIL CHAIN MARKETER**
BROKER *		o Wholesalers o End Users o Company-Ops o Retail Dealers	o Company-Ops o Retail Dealers

* - *Brokers can sell to any or all entities. May be regular supplier or one time deals.*

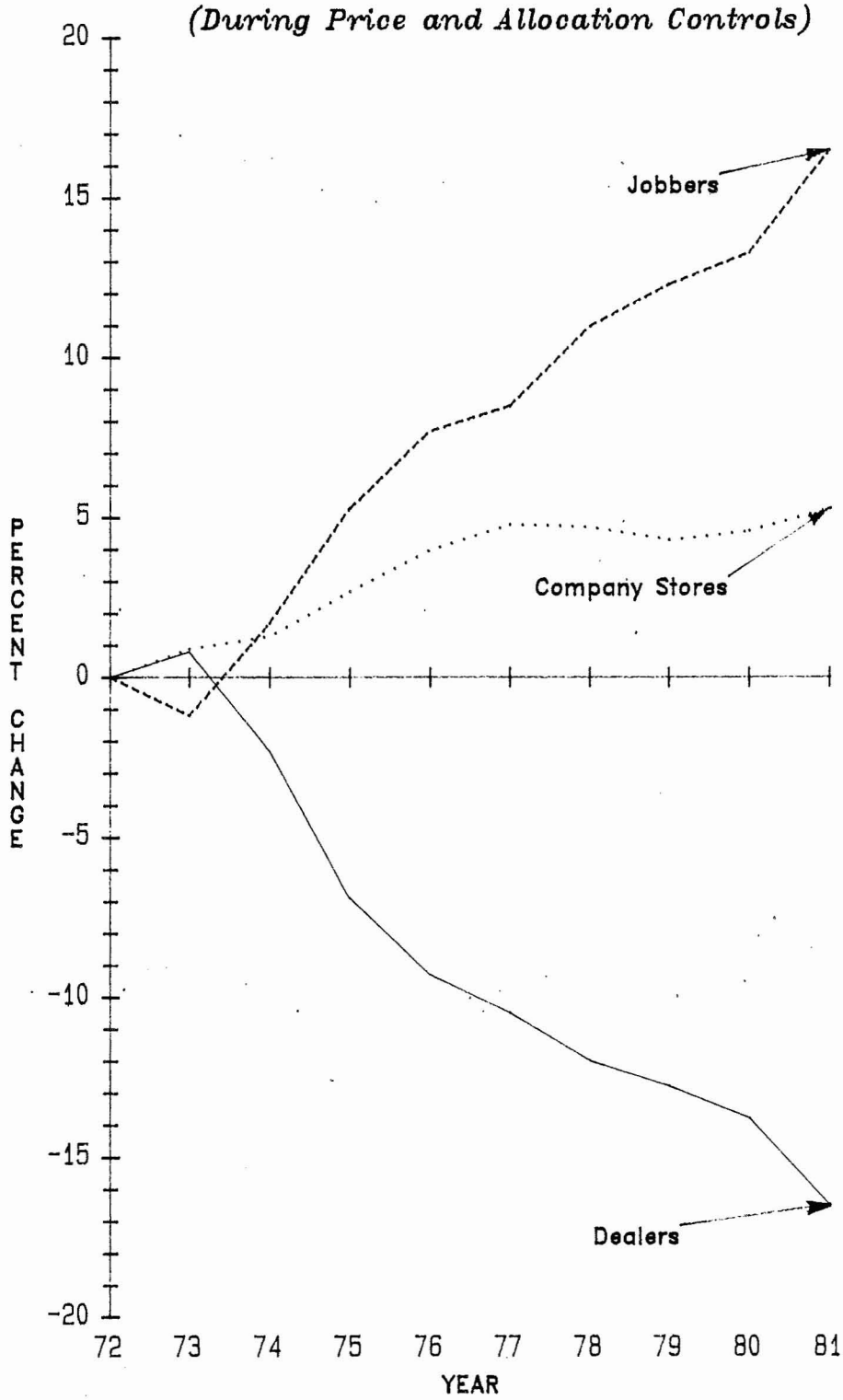
As previously noted, (page 125), during price and allocation controls, the marketshare of unbranded jobbers increased significantly, from about fifteen percent in 1972 to about twenty five percent in 1981. During this same period, branded jobber marketshare increased from about twenty to about twenty-five percent.[1] Combined, branded jobbers and unbranded jobbers constitute that portion of the market we have termed the wholesale market in this report. They are also referred to as the indirect distribution system.

These wholesalers often own and operate retail outlets. Some operate retail outlets as company-ops. Others have a number of branded dealers that lease from them. Some have a combination of both.

During the period of price and allocation controls, jobbers dramatically increased their marketshare. Their gain closely paralleled the loss by refiner supplied lessee-dealers. There were incentives in the price and allocation controls for jobbers to increase marketshare. Some say that the decline in lessee-dealers during this period was already a trend in the marketplace that was accelerated by the energy environment of the 1970's. The figure depicts the very significant shifts in marketshare the occurred between 1972 and 1981.

NET MARKETSHARE CHANGES

(During Price and Allocation Controls)



(Source: Deregulated Gasoline Marketing, p. 66)

Data is not available for the period since decontrol in 1981 for refiner supplied lessee-dealers or for wholesalers. It is believed that lessee-dealer marketshare continued to decline, but at a decreased rate of decline. However, there is no information that differentiates between lessee-dealers supplied directly by refiners and indirectly supplied lessee-dealers. It is believed that aggregate wholesale marketshare reversed its trend and has declined since decontrol. There is no information about branded versus unbranded marketshare. The wholesale trends are discussed in greater detail in the distribution section, page 95-98.

In conclusion, it is easy for the competition debate to get lost in the company-op versus lessee-dealer debate. First, there is no good underlying data to form the basis of a factual debate. Note for example, that data for lessee-dealer marketshare trends since deregulation is not available from DOE (or any source we could locate). Consequently, the debate is based upon deduced assumptions.

Second, data about company stores, per se, provides very limited insight into the competitiveness of the industry. Information that would be very illuminating is data about how the refiner's marketshare is changing in their branded outlets. To obtain this, the volumes of the refiner's directly supplied lessee-dealers and their company-op's as well as their branded wholesaler's company-ops and lessee-dealers would need to be aggregated.

That type of data is not collected directly. However, DOE collects data that is a reasonable proxy. They collect and

report the total volume of product each refiner sells into a state for consumption, (i.e. total volume of branded plus unbranded product). This is the best information available for assessing marketplace changes. The next section will present a discussion of these measures of competitiveness.

In concluding this section we would say, when marketplace behavior is the issue, the debate frequently misses the point. The decline in service stations only indicates a change in the marketplace. The change in retail styles simply describes the changes in greater detail. There is not appropriate data available about all lessee-dealers or all company-ops. Consequently, there is little choice but to base the marketplace behavior debate on the DOE measures of concentration.

D. *Trends in Measures of Market Competitiveness*

The number of competitors in a market is frequently used as a proxy for the competitiveness of a market. In this industry this is frequently referred to as concentration of marketshare or simply, concentration. Two measures of concentration will be presented.

The first, Four-Firm Concentration, describes what percentage of the gasoline sold in a state is supplied by the four largest firms. The second measure is called the Herfindahl Index. It quantifies the market share of all suppliers for a given market into a percentage that could be compared to the index value for other markets. Thus it combines not only the total number of suppliers but also their marketshare.

The following excerpt from the DOE draft report, Deregulated Gasoline Marketing, summarizes the use of concentration as a

proxy for competition and the use of Herfindahl Indexes and Four-Firm Concentration data. The importance of the concepts justifies a detailed presentation.

> *A typical index for the extent of competition is market concentration. Thus, one reasonable test for the impact of marketing changes on competition is to assess their impact on concentration. ... There are several commonly used concentration measures. One type is a concentration ratio. This ratio is the percentage of the total market volume accounted for by a specified number of companies. For example, the four-firm concentration ratio is the percentage of the total volume sold by the four largest marketers. The other type of measure is one that is comprehensive in the sense that the market share of every firm in the market is included in the index. The most common such measure is the Herfindahl index. It is computed by expressing each company's market share as a decimal, squaring the individual company market shares, and then summing all of them together. The value of the index then must lie between 0 and 1, where 1 indicates a monopoly situation.*
>
> *In its Merger Guidelines, the Department of Justice (DOJ) uses the Herfindahl index to categorize markets as unconcentrated, moderately concentrated, and highly concentrated. These correspond to an index of less than 0.1, between 0.1 and 0.18, and greater than 0.18, respectively. The DOJ also indicates that Herfindahls of 0.1 and .18 correspond roughly to four-firm concentration ratios of 50 and 70 percent, respectively.*
>
> *The data set used to calculate the concentration measures is the EIA-25 data.* These data are the first sales into a state by all suppliers. Sales not intended for final sale in the state are to be excluded. The total volume, however, may be overstated to some extent if some product originally intended for final sale in the state is resold outside the state. Calculating each supplier's market share based on their first sales tends to overstate their share of final sales. This would tend to overstate the measured concentration by an unknown amount.* The trends in concentration over time, on the other hand, should not be systematically affected by this overstatement.* [10]

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* - This report uses DOE Data from 1983-85 to extend the data series referred to in the above statement. 1983-85 data may understate and/or overstate up to 40%. (See Appendix C for more information on this.)

10. - ibid., p. 88-89.

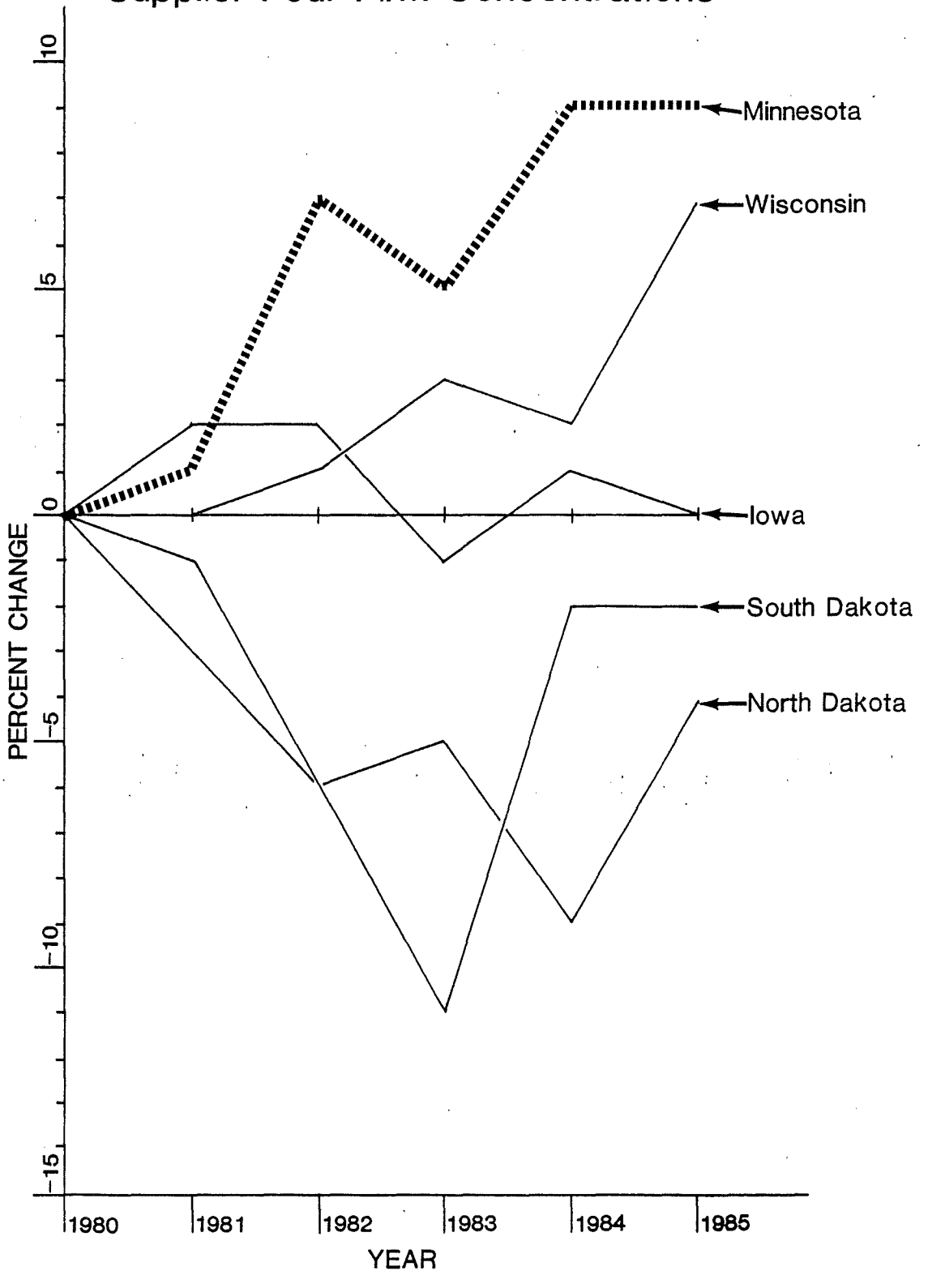
It must be noted that this is not the ideal methodology for calculating concentration measures. Data at the state level is extremely gross. This is because state lines represent arbitrary political boundaries that frequently bear no relationship to the economic markets. Proper assessment of concentration would occur by tracking marketshare data by each major market area, e.g. each significant metropolitan area. Unfortunately, DOE data for each market is not available. For a more detailed discussion of this matter see Appendix C.

It is important to note that this data is best used to understand trends, not absolute levels. It would be incorrect to use the data as a basis for stating an absolute market share, (e.g. 1982 four-firm concentration in Minnesota was 65.7%). DOE cautions that their pre-1981 data may overstate concentration by an unknown amount. We know current DOE data errors both high and low, unpredictably, to unknown degrees. The degree of unknown error renders conclusions about level of concentration dubious, not only for current DOE data but also the old reporting forms. (See Appendix C).

There also is problem with approaching the question from this perspective because supplier data is only an indirect measure of activity at the wholesale and retail levels. Unfortunately, retail level data is no longer collected.

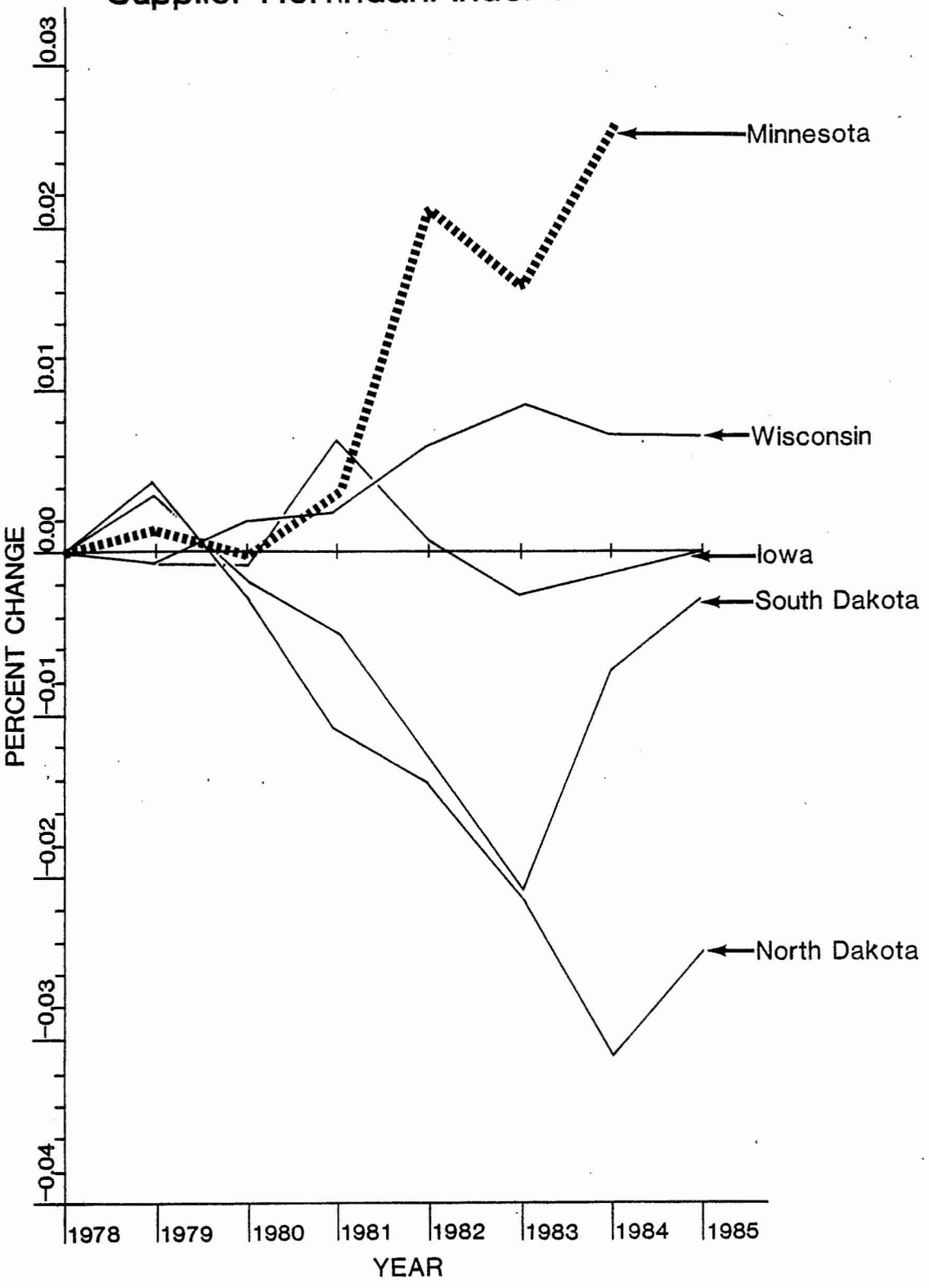
Graphs displaying the relative trends for our region follow. In both measures, Minnesota and Wisconsin show increases. (Most likely, these increases are largely the result of the increased marketshare captured by Ashland, marketing through their SuperAmerica retail stores.) See pages 73-82 for a complete presentation of this data.

Regional Trends Since Deregulation
Supplier Four Firm Concentrations



SOURCE: Table, p. 76

Regional Trends
Supplier Herfindahl Indexes



(.001 1 percentage point: 1000 points = 1)

SOURCE: Table p. 80

VI. ETHANOL BLENDED GASOLINE

A. *Introduction*.

Ethanol blended gasoline is a blended motor fuel consisting of 90 percent gasoline and 10 percent ethanol and is often sold as "gasahol." Ethanol is a form of fuel alcohol made from distilled agricultural products. Any organic substance containing high concentrations of carbohydrates can be used effectively in distilling ethanol but corn is the primary ingredient.

Ethanol was originally marketed as a gasoline extender. This was, and still is, the case for countries, such as Brazil, with little or no indigenous petroleum resources. One gallon of ethanol mixed with nine gallons of gasoline would create ten gallons of fuel hence reducing demand for gasoline by 10 percent. More recently ethanol is being valued for its ability to increase the octane rating in motor fuel. The octane rating is a numerical measure of the antiknock property of motor fuel. The recent demand for smaller automobile engines with improved engine performance has resulted in higher compression engines creating the need for higher octane fuel.

At the same time, health researchers concluded that the lead-based additives used to increase fuel octane ratings are creating health and environmental hazards. In the mid 70s, the U.S. Environmental Protection Agency (EPA) required service station retailers to provide unleaded fuel for automobiles and required automobile manufacturers to use engines built to operate on unleaded fuel in all new passenger vehicles. As

older vehicles are scrapped, the percentage of automobiles using unleaded fuels continues to increase. Unleaded fuel sales now comprise approximately 65 percent of all gasoline sales. In the early 1990s, unleaded gasoline will comprise about 95 percent of all gasoline sales.

B. *How Much Ethanol Is Being Used?*

Ethanol use in Minnesota has increased dramatically within the last six months. Most analysts think the recent increases were caused by two factors. First, state and federal subsidies have increased dramatically in the last year. Minnesota's tax credit for ethanol increased from two cent to four cents per gallon of blended gasoline on July 1, 1985. The analogous federal credit increased from five cents to six cents on January 1, 1985. Thus, in Minnesota the combined state and federal tax credit for ethanol increased from seven cents to ten cents per gallon within six months. The new credit level effectively reduced the cost of gasahol to less than the cost of gasoline. (see p. 151).

Second, the EPA has established much more restrictive rules regarding the permissible level of lead in gasoline. EPA rules require that lead levels be cut in half as of July 1, 1985 and reduced again as of January 1, 1986 to one tenth of the pre-July level. (Lead content reduced from 1.1 grams per gallon to 0.5 by July 1, 1985 and to 0.1 by January 1, 1986.) Additional reductions in lead levels will occur through 1990. Hence, demand will increase for leadfree (or low lead) octane enhancers. As a result it is possible there will be shortages of traditional octane enhancers resulting in increased prices

for these materials. Other methods of increasing the octane levels of gasoline exist but these methods are highly capital intensive and not all refineries have the capability. Thus, ethanol is now viewed as an economically (given current subsidies) viable and environmentally acceptable octane enhancer.

In Minnesota, little ethanol blended gasoline (under two percent of all gasoline sold) was sold prior to 1985. During 1985 consumption began to rapidly increase due to the additional federal tax incentives, the EPA mandated lead phase-out, the competitive policies of major gasoline retailers and the large amount of ethanol available in the national market. Consumption of ethanol blended gasoline increased to over 30 percent in September of 1985. It was 40 percent by November.

As of November, SuperAmerica and Mobil, two of the largest gasoline retailers in Minnesota, have decided to include ethanol in their unleaded gasoline blends. Amoco has been blending ethanol with its regular gasoline since last summer.

C. *Consumer Concerns*.

Typical of most new products, the introduction of ethanol into the marketplace has not been free of problems. However, it appears the most serious technical problems relating to ethanol blending have been identified and overcome by the industry. The remaining problems seem to be those which are inherent to the introduction of all new technologies which must interact with existing technologies. Ethanol fuels are being used in automobiles that were not initially designed to run on blended fuels. The major areas of concern will be discussed below.

What Automakers Are Saying To Buyers of '84 Models

	Ethanol Blends up to 10%
GM	Approved, but switch to gasoline if problems occur.
Ford	Approved, but switch to gasoline if problems occur.
Chrysler	Approved, but switch to gasoline if problems occur.
AMC/Renault	Approved, but possible paint damage and fuel system corrosion.
Volkswagon	Could adversely affect durability, fuel economy and emission control equipment.
International Harvester	May be used without affecting warranty.
Honda	Not recommended
Toyota	Approved
Mazda	Approved

Source: Motor Vehicle Manufacturer Assn

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i. Engine Performance.

Ethanol blended fuels can affect engine performance for some automobiles. Some cars designed to burn regular grade gasoline have experienced problems with the alcohol in ethanol negatively effecting components of the carburator and fuel line system. These problems are generally restricted to cars built before 1975. In these cars some components are not resistant to the solvent characteristics of alcohol. The Department of Energy and Economic Development (DEED) and the Attorney General's office have received some calls complaining about these problems. However, cars built before 1975 are becoming an increasingly smaller part for the total population of cars in use. In addition, since these cars are all over 10 years old, it is sometimes difficult to determine if the alcohol in the ethanol blend was responsible for the problem. While this problem remains a concern it does not appear to be significant.

ii. Fuel Efficiency.

Some drivers have expressed concerns that the use of ethanol blend fuels might result in significantly lower fuel efficiency, which in effect would raise the real price to the consumer. Ethanol does not contain as much energy per gallon as does regular gasoline. However, because ethanol generally comprises about 10 percent of the contents of blended gasoline the net loss of fuel efficiency is minor, and results in a loss of less than 4.5% in fuel efficiency. Cars designed to attain 25 miles per gallon on regular gasoline will tend to obtain about 24 miles per gallon with ethanol blended fuel.

However, many older automobiles built prior to 1973 were designed to run on very rich fuel mixtures in the carburator. These cars were known as "gas-guzzlers" because of the low mileage obtained. Ethanol blended gasoline tends to lean out the mixture and these older cars tend to obtain increased mileage, with a slight corresponding decline in engine response.

iii. Separation of Water in the Gas Tank.

Separation of water in the gas tank is possible if the fuel contains more than one percent water. In that case the gasoline separates from the ethanol and the water. The ethanol-water blend sits on the bottom of the tank. This mixture will not freeze but is generally too lean to be burned in the carburator.

The water content problem is a function of service station technology and maintaince practices, a fact well known to the industry for over five years. Separation has not been a problem recently because stations are better prepared to handle this new fuel. DEED has not experienced complaints regarding this matter in the last 3-4 years.

iv. Solvent Effect.

Another potential problem is the solvent effect on service station storage tanks. Ethanol has greater solvent characteristics than does regular gasoline. Thus, care has to be taken when service stations switch the fuels in their holding tanks. When ethanol blends are substituted for regular gasoline the alcohol in ethanol tends to interact with any impurities in the tank and releases them into the fuel. If the fuel is not filtered as it is pumped into the automobiles the possibility exists for contaminated fuel which might clog the fuel filter.

The industry has recognized this problem. Service stations generally are taking greater care in cleaning out their tanks prior to switching fuels and have added filters at the pump. The same problem can also occur in the tanks within automobiles themselves. Generally speaking, customers would be wise to have their fuel filters checked for clogging, however, this is a prudent precaution which should generally be done as part of the normal maintenance of an automobile.

Ethanol can also act as a solvent on some plastic or rubber engine components and on certain paints. Ethanol, for example, tends to dissolve fiberglass. These characteristics are well known within the industry and considerable attention appears to have been paid to this problem. Engine manufacturers are likely to take these factors into consideration in their new designs and in providing substitute components.

v. Impact on the Price of Gasoline.

A recent MN/DOT report compared the costs of blended gasoline to unblended gasoline. The following table summarizes their analysis:

GASAHOL PRICE BASIS

	Unleaded/gal. (cents)	Gasahol/gal. (cents)
Wholesale Price:		
Unleaded at $0.86/gal.*	86	77.4 (90%)
Ethanol at $1.55/gal.	--	15.5 (10%)
WholesaleTerminal Price:		
(Base price; no tax)	86	92.9
Plus:		
Federal excise tax	9	9.0
State excise tax	17	17.0
Distributor Haul Costs	1	1.0
Dealer Cost Including Tax	113	119.9
Minus:		
Federal tax credit		6.0
State tax credit		4.0
Net Dealer Cost:		
(Plus Tax; Minus Rebate)	113	109.9
Net Price Advantage of Gasahol:		3.1 cents

(Source: Minnesota Department of Transportation)

* - If price decreases to $0.80 per gallon, net dealer cost for unblended drops to $1.07 and blended to $1.045 decreasing the net price advantage of gasahol to 2.5 cents per gallon.

Our survey of retail prices found no significant price difference at the pump between blended and unblended regular. Industry representatives agreed that this was an accurate finding.

This can be explained one of two ways. One explanation is, the tax rebates are not being passed down to the retail dealer. Consequently, at the retail level prices are the same. The explanation industry representatives advanced is that the profit margin on unblended regular is reduced so that it can be sold at the same retail price as blended. Stated differently, the businesses selling unblended regular absorb the price difference.

VII. REPAIR AND SERVICE.

One claim in the industry debate is that the decline in the number of traditional service stations has lead to problems for the consumer in the repair and service end of the industry. This section will discuss some of the issues frequently mentioned, poor quality of service and lack of availability of service.

There is a change in the industry away from the traditional service station towards a separation of the the two functions they provided, gasoline sales and auto service and repairs. In the metropolitan areas this shift tends to be towards high volume gasoline outlets, frequently in the form of gas only pumpers or convenience stores. It tends to be towards specialty repair shops for service and repair. In the non-metropolitan areas this shift tends towards fewer stations selling gasoline, with an increase in general repair shops rather than specialty shops. This evolving pattern is consistent with traditional notions of efficient retail marketing. Firms specialize where the market is large enough to allow them to exploit economies of scale.

A. *Service and Repair Businesses: Population Trends*.

The Department of Commerce Census of Service Industries documents this trend. On average both receipts and payroll for specialty shop increased 50-60% between 1977 and 1982.[1]

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1. - U.S. Department of Commerce, Census of Service Industries, 1982, p. 9.

The data for Minnesota indicate that Minnesota follows the expected trends. The table on page 155 displays the figures for Minnesota.* (When interpreting this data, bear in mind the limitations of the U.S. Dept. of Commerce data as discussed on pages 106-107. A good case could be made that general repair shops are most likely to not have payroll, and consequently to be the most type of business most under-reported by the census data.)

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* - See Appendix D for a graphic display of this data for each Regional Development Commission in Minnesota.

TRENDS

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SERVICE STATIONS versus SERVICE SHOPS

For Firms With Payroll

Subject to Federal Income Tax *

	Number of Establishments				Annual Payroll (in 1,000's)				Total paid employees			
FOR MINNESOTA	1967	1972	1977	1982	1967	1972	1977	1982	1967	1972	1977	1982
Gasoline Service Stations	3,257	3,787	2,800	2,230	39,094	63,918	82,361	103,809	12,666	17,657	15,277	13,321
General Automotive Repair Shops	436	460	487	566	5,090	8,339	16,057	27,352	1,014	1,358	1,669	2,060
Specialty Shops:												
Electrical and Fuel System Services	na	16	20	24	na	335	667	1,304	na	46	68	103
Radiator Repair	na	31	25	29	na	436	872	1,166	na	62	89	79
Glass replacement and repair	na	39	48	70	na	2,037	3,873	4,496	na	244	265	284
Brake, Front End, and Wheel Alignment	na	43	33	32	na	1,720	2,197	3,062	na	185	167	180
Exhaust System Services	na	11	12	36	na	479	1,084	2,362	na	49	80	144
Transmission Repair Shops	na	22	69	58	na	522	2,172	3,769	na	78	194	226
Other Automotive Repair Shops	na	11	9	30	na	379	875	2,071	na	39	51	152
TOTAL (repair shops)	na	633	703	845	na	14,247	27,797	45,582	na	2,061	2,583	3,228

(Source: Dept. of Commerce Census of Service Industries and Retail Trade)

* - At best these figures provide a sense of the rapid changes in the industry. No further manipulations of these data can be undertaken that would provide useful information about the current trends. In addition to the problem with definitions, the 1982 census did not include data for all firms due to an error by the IRS. Consequently, this data for establishments with payroll does not accurately profile the business trends in question. For example, the 1972 census reported there were 4,585 service stations total but only 3,787 with payroll. Similarly, in 1977 it reported there were 3,280 total and 2800 with payroll.

NOTE: This type of information is displayed for each Regional Development Commission in Minnesota in Appendix D.

B. *Consumer Opinions.*

The State Planning Agency commissioned a statewide consumer survey to determine consumer attitudes about the quality and availability of automobile repairs and service.* This type of survey measures consumer expectations about the way the world should be. The survey found, for the six sampled services, 70-90% of the people felt they received good to very good service. On a similar measure, 70-90% felt availability of service was not a problem. 70-90% of the people interviewed felt that the quality and availability of the repairs and services surveyed was better than 5 to 10 years ago. In short, we found no evidence that Minnesota consumers are frustrated or disappointed with automobile repairs or service regardless of where they live.

C. *Typical Prices for Some Routine Repairs.*

In addition to the survey on consumer expectations, we conducted a study of prices on common types of repairs. The purpose of this study was to look at pricing by location around the state and by type of business. The survey was designed to obtain the regular price, not a special price.

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* - Random telephone sample of 1008 Minnesota adults aged 18 or over yielded 925 car owning households statewide in MN. Car owning households were asked questions about six typical services or repairs: tune-up, brake job, oil change, tow, exhaust system, and tire repair. Respondents were asked: Next time, what type of source would you have the particular work done at; Last time it was done, what type of source did the work; How do you feel about the availability and quality of the particular service that was done; and Compare today's repairs and service to that which you had done 5 to 10 years ago.

The most outstanding fact that emerged from the study is the tremendous price ranges offered in the market. The price range for each of the repairs surveyed varied by 200% to 1000%. Even the adjusted price ranges varied by generally 200%. This was true regardless of location or type of ownership. The message is clearly, let the buyer beware.

The table on the following page, "Price Summary," summarizes the highlights of the survey. In general the metropolitan area is 10 to 20% more expensive than non-metro urban areas for repairs which in turn is around 10% more expensive than rural areas. Independently owned shops tended to be 10% less expensive, while company owned shops tended to be somewhat more expensive.

Note that the category "Specialty Repair" is not usefully comparable to the other categories. Specialty shops tend to be located in the 7-County metropolitan area. The other categories have a large component of "Rural" prices to bring down their average. Specialty repair prices are relatively high because they are reporting as disproportionately large component of metro area prices.

PRICE SUMMARY

Repair	{LOCATION} 7-County Metro.	Urban Outstate	Rural	{TYPE OF BUSINESS} Service Station	Auto Dealer	General Repair	Specialty Repair *
TUNE-UP							
Range	$25-$150	$15-$135	$14-$65				
Mean	$52	$44	$34	$43	$48	$43	$47
Median	$50	$41	$33	$43	$44	$44	$47
Sample Size	(143)	(108)	(85)	(190)	(73)	(54)	(19)
OIL CHANGE							
Range	$11-$30	$12-$27	$11-$25				
Mean	$21	$19	$18	$20	$19	$20	$18
Median	$20	$20	$18	$20	$20	$20	$18
Sample Size	(164)	(135)	(117)	(239)	(82)	(69)	(26)
BRAKE-JOB							
Range	$25-$165	$20-$150	$20-$135				
Mean	$79	$59	$51	$65	$67	$62	$70
Median	$75	$58	$46	$60	$60	$60	$70
Sample Size	(153)	(112)	(96)	(209)	(64)	(61)	(27)
JUMP START							
Range	$5-$25	$5-$25	$2-$25				
Mean	$13	$11	$9	$11	$12	$11	$12
Median	$15	$10	$8	$11	$11	$10	$12
Sample Size	(121)	(92)	(92)	(205)	(52)	(35)	(13)
TOWING							
Range	$13-$35	$8-$35	$5-$50				
Mean	$24	$18	$15	$21	$19	$20	$22
Median	$25	$18	$15	$20	$18	$20	$25
Sample Size	(125)	(68)	(70)	(175)	(40)	(34)	(15)
TIRE ROTATE/ BALANCE							
Range	$10-$54	$10-$40	$6-$48				
Mean	$28	$23	$20	$24	$25	$24	$26
Median	$28	$24	$20	$24	$25	$25	$24
Sample Size	(142)	(101)	(93)	(211)	(63)	(42)	(20)

(Source: Minnesota State Planning Agency Survey)

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* - This category is not commensurable with the other "Type of Business" averages. This price has an upward bias.

The table below, "Adjusted Price Range Summary," is included to provide a comparison for the extreme prices reported in the preceding "Price Summary." Note that the range still varies by generally 200%.

ADJUSTED PRICE RANGE SUMMARY #

Service and Repair Price Survey

Repair	7-County Metro.	Urban Outstate	Rural
TUNE-UP			
Range	*$33-$87*	*$25-$70*	*$20-$55*
OIL CHANGE			
Range	*$15-$28*	*$13-$25*	*$13-$22*
BRAKE-JOB			
Range	*$45-$120*	*$34-$94*	*$30-$85*
JUMP START			
Range	*$9-$20*	*$6-$15*	*$5-$15*
TOWING			
Range	*$16-$35*	*$10-$25*	*$5-$35*
TIRE ROTATE/ BALANCE			
Range	*$18-$44*	*$12-$32*	*$12-$29*

(Source: Minnesota State Planning Agency Survey)

- To determine what the range of most prices is, the most unusual prices were removed. For each category, the highest and the lowest 5% were removed, i.e. the adjusted range contains the 90% of the reported prices. It is this adjusted range that is reported in this table.

D. *Current and Potential Problems.*

It would be an oversimplification to conclude that the foregoing results indicate that all is well in the repair garage. Experts are concerned about several trends that seem to be emerging. There is concern that consumers must have the skill to diagnose their own problems to enable them to pick the correct speciality repair shop. There is concern that mechanics in some sectors of the market may have difficulty keeping their skills up to date with the demands of the new automobiles.

A 1978 U.S. Department of Transportation (DOT) study helps to place the service and repair issues into a useful context. This study concluded that only 61% of the $50 billion U.S. consumer repair bill is for valid repair costs. Stated conversely, consumers spent $20 billion annually (1978 dollars) on improper or unnecessary repair and maintenance practices. The DOT report contained the following table[2]. This same study also included costs and benefits of a variety of remedies to these problems.

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2. - U.S. Dept. of Transportation, National Highway Traffic Safety Administration, Office of Program Evaluation, Auto Repair and Maintenance, Program to Reduce Consumer Loss, DOT HS-803 355, May 1978, p. 19.

DISTRIBUTION OF CURRENT AUTO REPAIR EXPENDITURES AND CONSUMER LOSSES

Category	*$ Millions*	*% of total*
Valid Repair Costs	30350	61%
Consumer Losses	19650	39%
Losses by category:		
1. Faulty Repairs	3826	8%
2. Package Deals	3366	7%
3. Unneeded Repairs - (sold with possible fraudulent intent)	2324	5%
4. Shotgun Repairs - (bad diagnosis)	1239	2%
5. Overmaintenance	2128	4%
6. Undermaintenance	4534	9%
7. Modularized or non-standard parts	2233	4%

An examination of the consumer losses reveal that there was no single culprit identifiable. Likewise, an examination of the proposed solutions reveals that there were no single simple answers.

We did not determine if any of the recommendations were implemented. It seems reasonable to assume that the basic magnitude of the problem remains similar today; a large percentage of the repair and service dollar is going to improper and/or unnecessary repair and maintenance practices.

Before proceeding with our discussion of the repair industry in Minnesota, it might be useful to frame the issue. On one extreme there are cases in which the consumer protection laws are abused by consumers. Consumers will harangue the repair firm, without cause, in the hope of getting a settlement so the

repair firm can avoid legal costs. On the other end is the fraudulent repair firm, purposefully performing improper or unnecessary repairs. On another dimension, there are huge metropolitan dealer garages with fleets of specialized mechanics contrasting with small towns that might have one good mechanic who knows how to solve most problems; both contrasting with specialized repair shops with mechanics with training in only one area of repair.

To illustrate the issues and some proposed answers in the service and repair business, we will present the perspective of one consumer group, the Minnesota State Automobile Association (MN-AAA). This next section is based upon conversations and communications with them.

One potential problem area is availability of service to the highway traveler. Fewer service stations and dealers are in the automobile repair business. One ramification of this is fewer vendors of repair service open for business late at night and on weekends. For new model cars and unusual problems, the availability of services may be even more limited by the lack of the skills or parts required to perform the work. In response to this problem, the MN-AAA has instituted a program that offers towing up to 100 miles to get to a vendor who can perform the needed emergency repairs.

One chronic concern is the waste and fraud attendant to identification of problems. In other states, comprehensive automobile diagnostic clinics have evolved in response to these concerns. These businesses are exclusively in the business of diagnosing problems. Similar to the medical model, the consumer

leaves with a prescription for the needed repairs. This is a business style that could appear in Minnesota if there is adequate demand.

Another product that the MN-AAA has is a program of certification for automobile repair vendors. If one of their members has a problem with one of MN-AAA's certified vendors, MN-AAA will act as an arbitrator of the problem.

There are two common potential problem situations that require efficient consumer protection laws. The first is the case in which a vendor allegedly attempts repairs beyond their ability and is unsuccessful or worse, inflicts damage. The second is the case in which the vendor is alleged to have performed improper or unnecessary repairs. In both cases there can be tremendous indirect costs to both parties. Based upon the comments we received, it appears that it would be cost effective to comprehensively review the existing statues and dispute resolution institutions towards the end of increasing the fairness and efficiency of adjudicating these types of problems.

The final area to consider is the training of mechanics. First, for many of the new automobile mechanical systems, several weeks of training may be required to learn diagnostic and repair procedures. For many repair businesses, this could mean three to six weeks without the services of their only mechanic every year. For many of these businesses this means they simply cannot afford to have their mechanic get ongoing training. They have to hope to hire trained mechanics.

There are several different avenues to obtain state of the art training. One is through company training programs, be they automobile dealers or brand name service station programs. Private training schools are another option. The third option is the public education system, high school and vo-tech levels.

One method of approaching the problem of skilled mechanics is on the supply side. This could mean continued emphasis on automobile repair programs in the public education system with special emphasis on high school preparation courses in math, physics, electrical and communication skills. A good supply of skilled mechanics would result in many direct and indirect benefits.

Minnesota has made an investment in training automotive repair specialists. Twenty-eight programs exist in its 30 area vocational technical institutes (AVTI's). The AVTI program has developed cooperative training curriculums with the industry and the state has invested over $2,500,000 since 1978 to upgrade existing equipment. Industry has also donated equipment in order for students to train on the latest models. Minnesota's programs were recognized nationally in 1984 and 1985. The Hutchinson and Hennepin Technical Centers received the "Automobile Award for Excellence" in the United States from the Motor Vehicle Manufacturers Association.

Graduates from the 2-year program have been placed both in the metro area and outstate. However, according to a recent survey conducted by the AVTI's, out of the 90% employment rate among the respondents, only 30% remain employed as mechanics or

automobile technicians. The remainder have moved to other automobile services or unrelated jobs.

Nevertheless, it is conceivable that with Minnesota's high quality programs it could become the leading training center in the Midwest. Similar to the health sciences, Minnesota could become a net exporter of trained automobile repair professionals. In return for this investment in public education, the public would enjoy a trained supply of practitioners that would tend to keep prices down and efficiency and effectiveness of repairs up.

Unless there are significant changes in the part time training system for automobile mechanics, MN-AAA felt independent dealers (particularly outstate) will have an increasingly difficult time obtaining properly trained mechanics. They felt that franchisees will offer better trained and informed mechanics than independent dealers due to franchisor training programs.

Recently, a WCCO television investigative report (Exhibit A, p. 167) found that even auto dealers seemed to improperly perform certain repairs on their own brand of automobile.[1] This study clearly demonstrates one type of invisible costs related to insufficient levels of repair; transfer of needless costs into the future. Money would have been wasted on excess tire wear, unbeknownst to the consumer. This example is no different than an improperly tuned car that consumes too much fuel. Protecting consumers from this type of problem through the legal system would be extremely difficult and costly.

Protecting them by promoting a good supply of trained professionals would likely be very cost effective.

The WCCO survey results are reproduced on the next page. This survey was performed by having an independent expert purposefully mis-align the vehicle. Then, as the summary supplied by WCCO indicates, they behaved like most consumers and relied on the shop to tell them what needed to be done to restore the car to optimum operating condition. Note the evaluation of the automobile dealers; the vendors theoretically most skilled in repairing their own brand of automobile.

EXHIBIT A

WCCO-TV'S

"FOR YOUR MONEY"

WHEEL ALIGNMENT SURVEY

We sent a 1985 Ford Tempo, a car with an independent rear suspension to six alignment shops in the Twin Cities. The Ford Motor Company says the Tempo, the Topaz, and other independent suspension and front wheel drive vehicles need a four wheel, not just a front end alignment. We did not ask specifically for a four wheel alignment. Rather, we hoped to determine which shops were sufficiently modernized to provide it automatically.

MR. TIRE - DOWNTOWN MINNEAPOLIS: Understood our problem in detail. Had the computerized, diagnostic equipment necessary. Did best job. Charge: $24.95

GOODYEAR TIRE STORE - HARMON PLACE, DOWNTOWN MINNEAPOLIS: Was a close second. Had state-of-the-art equipment. However, our consultant said technician used less efficient procedure. Charge: $29.00

SEARS STORE - RIDGEDALE: Did ~remarkably good" front end alignment. But rear tires were still vulnerable to unnecessary tire wear. Charge: $19.95

MIDWAY FORD - ST. PAUL: Restored proper handling to vehicle but did not examine rear wheels at all. They were misaligned and our consultant said would wear too fast. Charge: $29.95

BOB RYAN FORD - MINNETONKA: Aligned only the front wheels. On a test drive the car continued to pull to the right. Charge : $31.95

HOOVER'S WHEEL ALIGNMENT - NO. MINNEAPOLIS: Hoover's did not do a wheel alignment at all. Instead the shop switched our tires to opposite sides for free. That did not correct the problem No charge.

Source: Supplied by WCCO-TV upon request. Survey broadcast Fall 1985.

At the furthest extreme in this discussion is the problem of fraudulent auto repairs. Another independent automotive expert, Sergeant David Niebur, Supervisor, White Collar and Consumer Fraud Unit, Minneapolis Police Department, expressed concern that not only are faulty repairs increasing but there has been a significant increase in fraudulent repairs.

He attributed this to the proliferation of high volume repair operations coupled with the demise of the corner repair station. He felt it was the result of being treated as a number rather than a neighbor. (Where volume is high enough and/or people move frequently, it is possible to operate profitably based on a business plan of no repeat customers.) He has investigated this problem in other cities around the nation as well as their remedies. His office plans to initiate proactive investigations in February or March 1986 designed to obtain convictions for fraudulent automobile repairs.[3] These investigations will be targeted against businesses selling to Minneapolis residents.

At the state level of government, the Attorney General's office is charged with investigating consumer complaints about auto repair. It was discovered that the Consumer Services Unit has no record retrieval system that would allow them to determine if auto repair related consumer complaints have changed significantly, either qualitatively or quantitatively,

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3. - Sergeant David Niebur, Supervisor, White Collar and Consumer Fraud Unit, Minneapolis Police Department, telephone interview, November 12, 1985.

in recent years. The informal, subjective opinion of the staff familiar with the industry was that there has not been any dramatic change in recent years.

There is one final concern due, in part, to changes in the nature of the automotive industry. In response to our request for input, the MN-AAA suggested that there may be a problem emerging in rural Minnesota with dealer warranty service due to the declining number of dealers.

It should be noted that the number of automobile dealers has declined dramatically. One industry analyst reported a decrease of nearly 66% since the 1950's, from 74,000 to 24,000.[4] The 1982 Census of Retail Trade reported 741 Minnesota new car dealers in 1977 and 658 in 1982.[5] This data indicates that Minnesota is similar to the nation.

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4. - Milwaukee Sentinel, "Decline forecast for U.S. Auto Sales," October 23, 1985, p. 48.

5. - retail census, MN p. 4, 6.

APPENDIX A

Federal and State Laws Affecting Petroleum Marketing

This chapter provides an overview of federal and state laws which are currently in place to address various petroleum marketing practices.

The purpose of this chapter is to identify past and present legislative, regulatory, and judicial action.

The Minnesota Legislature has considered both divorcement and open supply legislation. Since 1974, five states and the District of Columbia have enacted divorcement statutes which are designed to prohibit or limit the establishment of company-operated stations by vertically integrated oil companies. Florida's divorcement legislation was repealed in 1985.

Open supply legislation is designed to allow any dealer to purchase refined products on the open market and sell branded or unbranded gasoline. Presently, franchised or leased dealers such as Amoco or Texaco are expected to purchase and sell only name branded or contracted gas at their stations. Neither divorcement or open supply legislation has passed at the federal or state level.

Minnesota's latest attempt to influence market trends was the enactment of legislation limiting conversions of stations to gas-only stations from full service stations. Minn. Stat. 80C.146, in effect only from August 1, 1984 to July 1, 1986, provides that the franchisor may not alter a full-service station building to eliminate service bays unless the franchisee

consents in writing. Amoco Oil Company has argued this statute is preempted by the federal Petroleum Marketing Practices Act (PMPA) and also has challenged its constitutionality in pending Minnesota cases.

Additional legal constraints at the state level are antitrust laws, sales-below-cost and minimum mark up laws, price discrimination laws and franchise laws. In the future, legislation may be enacted with respect to leaking underground gasoline storage tanks which may impose, directly or indirectly, additional costs on gasoline retailing.

At the federal level, the primary source of legal constraints on petroleum marketing have been antitrust laws, the Robinson-Patman Act, the Petroleum Marketing Practices Act, certain credit card provisions of the Truth in Lending Act and, prior to decontrol in 1981, mandatory petroleum price and allocation regulations.

This chapter discusses in detail federal and state laws and pending judicial actions, and Minnesota enforcement actions.

Whether any of this legislation offers effective protection against anticompetitive actions and unfair practices is a matter of perspective. Some contend that the laws are difficult to enforce because of their complexity or the standard of proof required to prevail. Others contend that the laws have been effective deterrents against truly anti- competitive action and unfair practices, and that those cases in which plaintiffs have not been successful were because the alleged injury was the result of market forces, not anticompetitive or unfair practices.

I. INTRODUCTION.

The focus of this discussion is upon the principal federal and state laws and regulations which have imposed legal constraints upon petroleum marketing since the 1970's.

At the federal level the primary sources of legal constraints on petroleum marketing have been the antitrust laws, the Robinson-Patman Act, the Petroleum Marketing Practices Act and the Emergency Petroleum Allocation Act.1/ Other federal laws including credit card provisions of the Truth in Lending Act and certain provisions of the tax code may also affect petroleum marketing. Antitrust laws, the Robinson-Patman Act and certain credit card provisions of the Truth in Lending Act are examples of federal laws which, while not directed solely at the petroleum industry, have an influence on petroleum marketing. Other federal laws such as DOE's system of mandatory price and allocation regulations are directed at one or more sectors of the petroleum industry. The Petroleum Marketing Practices Act (PMPA) is directed specifically at the

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1/ Other federal laws with a "more indirect" influence include Energy Conservation and Production Act, Pub. L. 94-385, 42 U.S.C. §§ 6801 et seq., 90 Stat. 1125 (1976); National Energy Act; Pub. Laws 95-617 to 95-621 (1978); Export Administration Act of 1979, Pub. L. 96-72 (1979); Federal Energy Administration Authorization Act of 1977, Pub. L. 95-70 (1977); 15 U.S.C. §§ 761 et seq. and 42 U.S.C. §§ 6246 et seq.; and Emergency Energy Conservation Act of 1979, Pub. L. 96-102 (1979), 42 U.S.C. §§ 6261 et seq. and 42 U.S.C. §§ 8501 et seq.

relationship between refiners and retailers of petroleum. The antitrust laws and Robinson-Patman Act were first enacted decades ago and have been amended and modified by judicial decisions over the years. The price and allocation regulations and the PMPA have been enacted since the mid-1970's. Divorcement and open supply legislation has been considered but not enacted at the federal level.2/ At the state level there are antitrust, franchise and pollution control laws which may affect petroleum marketing. In particular, a few states have recently enacted a variety of laws relating specifically to petroleum marketing including divorcement, uniform pricing, minimum mark up, open supply and credit and unfair practices laws. Divorcement3/ and open supply4/ legislation has been proposed but not enacted in Minnesota.

2/ See e.g. S. 326, 97th Cong., 1st Sess.; The Small Business Motor Fuel Marketer Preservation Act, H.R. 1362, 97th Cong., 1st Sess., The Small Business Motor Fuel Marketer Preservation Act, H.R. 1212 and 1755, 98th Cong., 1st Sess.; S. 40, 98th Cong., 1st Sess.; H.R. 5023, 98th Cong., 2d Sess., A bill to Amend the Petroleum Marketing Practices Act to Promote Fair Competition in the Distribution of Motor Fuel, H.R. 2406, 99th Cong., 1st Sess., Amendments to the Petroleum Marketing Practices Act; S. 1140, 99th Cong., 1st Sess., The Motor Fuel Sales Competition Improvement Act of 1985.

3/ See e.g., H.F. 1645 and S.F. No. 1603, 71st Sess. Minn. Leg. (1979).

4/ See e.g. S.F. 584, A Bill Granting Motor Fuel Retailers the Option to Purchase from Wholesalers Other than the Refiner and H.F. 888, 74th Sess. Minn. Leg. (1985).

II. FEDERAL LAWS AFFECTING PETROLEUM MARKETING.

A. Federal Antitrust Laws.

"Antitrust" refers to the body of the laws which protect competition and free enterprise in the marketplace. The antitrust laws seek to ensure that our industries are competitive, with a number of manufacturers or distributors offering for sale each product or service, all striving to attract customers. In a free market economy, competing businesses attract customers by lowering their prices and improving product quality. In order to earn a profit, businesses must seek to hold down their costs. Competition, therefore, stimulates firms to run their businesses more efficiently. When competition is restricted, prices are likely to increase and quality is likely to suffer. If a business does not have competition, it has little incentive to improve quality, lower prices or become more efficient. When there is only one seller in a market (called a "monopoly"), it may charge higher prices without fear of competition. When there are only a few dominant sellers (called on "oligopoly"), prices may be higher than competitive prices because of the interdependence of the sellers' pricing and output decisions. The principal federal antitrust or competition laws are the sherman Act,[5/] the Federal Trade Commission Act,[6/] and the Clayton Act.[7/]

5/ 15 U.S.C. §§ 1-7.

6/ 15 U.S.C. §§ 45-58.

7/ 15 U.S.C. §§ 12-27.

1. The Sherman Act.

a. Section 1 of the Sherman Act.

Section 1 of the Sherman Act prohibits contracts, combinations and conspiracies in restraint of trade. In order for there to be a violation of section 1, there must be two or more persons who conspire or take concerted action to restrain trade. The requirement of joint action involves a consensus or agreement by the parties to act together. This may be proved by direct evidence where there is an express agreement or, more commonly, the concerted action will be inferred by the courts. It should be noted that unilateral action undertaken by a business, even if done following a request of another competitor, cannot violate Section 1. For example, many dealer terminations involve the question as to whether the termination was unilateral, i.e., the result of an independent decision by the supplier or manufacturer, or whether the termination involved concerted action by the supplier with the competitors of the terminated dealer.

One problem faced early in the interpretation of the Sherman § 1 was that, if read literally, it would prohibit all contracts, because every contract "restrains" trade. Reasoning that Congress meant to prohibit only anticompetitive restraints, the U.S. Supreme Court therefore limited the application of Section 1 to those activities involving an "unreasonable" restraint of trade. Standard Oil Co. v. United States, 221 U.S. 1 (1911). Under the "rule of reason", whether a particular activity violates Section 1

requires an analysis of the anticompetitive effect of the restraint, the justifications for the restraint, and the possibility for less restrictive alternatives. The court will generally look at all of the circumstances to decide whether the restraint is unreasonable. Factors to be considered include the defendants' purpose or motive in imposing the restraint, the facts peculiar to the business, the history of the restraint, the reasons for its adoption and all of its effects. Chicago Board of Trade v. United States, 246 U.S. 231 (1918); National Society of Professional Engineers v. United States, 435 U.S. 679 (1978).

While most restraints of trade are analyzed under the rule of reason, there are certain types of restraints that are so inherently anti-competitive and unreasonable that they will be conclusively presumed to be illegal by the courts. These activities are called "per se" violations. As the Supreme Court observed in Northern Pacific Ry. Co. v. United States, 356 U.S. 1 (1958), "...there are certain agreements or practices which because of their pernicious effect on competition and lack of any redeeming virtue are conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use." Id. at 4. Agreements which are considered per se illegal include price fixing, division of markets among competitors, agreements among competitors to restrict output, and concerted refusals to deal or group boycotts.

"Geometric" distinctions are often helpful in determining the difference between cases qualifying for rule of reason analysis and those requiring per se treatment. Relationships or agreements among persons at roughly the same level in a chain of distribution, i.e., those who are competitors or potential competitors, are referred to in antitrust law as "horizontal" arrangements. Examples include two manufacturers, a group of retailers, or a distributor and a jobber. Most other business relationships involving restraints of trade are considered "vertical". Vertical relationships involve persons at different levels of the chain of distribution who normally would not compete against each other. Examples include manufacturer-wholesaler, distributor-retailer and franchisor-franchisee. The significance of these characterizations is that horizontal conduct and agreements--those between competitors or potential competitors--are subject to much more vigorous scrutiny under the antitrust laws than those that are vertical, and are much more likely to be classified as per se violations.

Although horizontal restraints are certainly relevant to any analysis of petroleum marketing, more prevalent are concerns with vertical restraints, i.e., restraints in the relationship between suppliers and distributors. Vertical price fixing, or resale price maintenance, is an agreement between seller and buyer fixing the price at which the buyer will resell the product. Unlike most vertical restraints, resale price maintenance agreements have been held to be per se unlawful. Dr. Miles Medical Co. v. John D.

Park & Sons, 220 U.S. 373 (1911). Earlier cases found illegal vertical price fixing in forms other than direct price fixing agreements. For example, in Lehrman v. Gulf Oil Corp., 464 F.2d 26 (5th Cir. 1972), cert. denied, 409 U.S. 1077 (1972), the court found that a refiner's price support program for dealers during local price wars constituted illegal price fixing where it was found that a quid pro quo for obtaining price support was adherence to the suggested resale prices. A refiner's distribution plan to maintain resale prices by consigning, rather than selling its product to buyers, was also held illegal because the court could find no legitimate business purpose for the consignment other than price fixing. Simpson v. Union Oil Co., 377 U.S. 13 (1964).

More recently, the tendency of courts has been narrowly to construe the per se application of the vertical price fixing rule. In addition, there have been attempts both by the U.S. Department of Justice and private parties to overrule the per se treatment of vertical price fixing in favor of a rule of reason approach that has prevailed with respect to non-price vertical restraints.8/

Restrictions placed by suppliers on distributors which do not directly involve price (non-price vertical restraints) have been scrutinized under the rule of reason since 1977. In Continental TV, Inc. v. GTE-Sylvania, Inc., 433 U.S. 36 (1977), the court overruled its prior decision in United States v. Arnold, Schwinn & Co.,

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8/ See Monsanto Co. v. Spray-rite Service Corp., __ U.S. ___, 104 S.Ct. 1464 (1984), reh'g denied, 104 S.Ct. 1464 (1984).

388 U.S. 365 (1967), which had held that territorial and customer restrictions placed by sellers upon buyer-distributors were per se illegal once title passed to them. In Continental, the court discarded the Schwinn title-passing distinction. In certain situations, the court reasoned, vertical territorial restrictions promote interbrand competition (admittedly at some cost to intrabrand competition)9/ by inducing distributors to provide service and repair facilities necessary to the efficient marketing of a manufacturer's products.

In addition to the territorial and customer restraints discussed above, other distribution practices which have been the subject of a great deal of antitrust litigation are exclusionary buying arrangements such as exclusive dealing, requirements contracts and tying arrangements.10/ All three of these concepts are involved in petroleum marketing. An exclusive dealing arrangement involves an agreement by the seller to sell to the buyer only on the condition that the buyer agrees not to deal in competitive products. A requirements contract makes no overt reference to competitors, but states that the buyer agrees to purchase all or a substantial part of his needs of a particular

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9/ "Interbrand" competition is the competition among manufacturers of the same generic product; "intrabrand" refers to competition among distributors of the product of a particular brand or manufacturer.

10/ Tie-ins and exclusive dealing arrangements are also prohibited by Section 3 of the Clayton Act (15 U.S.C. § 14) and Section 5 of the Federal Trade Commission Act (15 U.S.C. § 45).

product or service from the seller. A tying arrangement occurs when a buyer is permitted to purchase the desired item only if he agrees to buy a second item from the seller. A tying arrangement that requires the purchaser to accept the seller's entire line of products in order to obtain a desired product is referred to as "full-line forcing."

Unlike most other vertical restraints, certain types of tie-ins have been held by the Supreme Court to be per se illegal. International Salt Co. v. United States, 332 U.S. 392 (1947); Northern Pacific Ry. Co. v. United States, 356 U.S. 1 (1958). More recent cases, however, have severely restricted the per se treatment of tie-ins. There are three elements which must be established in order for a tying arrangement to be considered a per se violation: (1) there must be two products or services, the tying and tied products (or services); (2) the arrangement forecloses a "substantial volume of commerce"; and (3) the firm tying the products has sufficient "market power" in the tying product to make anticompetitive forcing probable. In Jefferson Parish Hospital Dist. No. 2 v. Hyde, ___ U.S. ___, 104 S.Ct. 1551 (1984), the Supreme Court unanimously reversed the Fifth Circuit to hold that a hospital's exclusive contract with an anesthesiological service firm did not constitute a per se illegal tying arrangement. In doing so, the Court reaffirmed that certain kinds of tying arrangements continue to be per se unlawful, but four Justices joined in a concurring opinion to urge that "the time has come to abandon the

per se label and refocus the inquiry on the adverse economic effects, and the potential economic benefits, that the tie may have." Id.

Exclusive dealing arrangements and requirements contracts differ from tying arrangements in that their legality is always determined under the rule of reason. Tampa Electric Co. v. Nashville Coal Co., 365 U.S. 320 (1961); Standard Oil Co. of California v. United States, 337 U.S. 293 (1949). The key question in determining the legality of these arrangements is whether there has been a substantial foreclosure of competitors from access to the relevant product market. Full-line forcing is also subject to analysis under the rule of reason. United States v. J.I. Case Co., 101 F.Supp. 856 (D. Minn. 1911); Pitchford v. Pepi, Inc., 531 F.2d 92 (3rd Cir. 1976), cert. denied ___ U.S. ___ (1976).

As a general rule, a supplier, so long as it does not have or is likely to attain monopoly power, may terminate a distributor without being subject to Sherman § 1 liability. United States v. Colgate & Co., 250 U.S. 300 (1919). However, if a dealer termination is part of any other arrangement or conduct that is a violation of the Sherman Act, such as price fixing or tying, then the termination itself will be a violation of Sherman § 1. Albrecht v. The Herald Co., 390 U.S. 145 (1968); Hobart Bros. Co. v. Malcolm T. Gilliland, Inc., 471 F.2d 894 (5th Cir. 1973). If the termination results from pressure exerted on the supplier by a competitor of the distributor in order to fix or stabilize prices of

the supplier's products, then a per se violation may result from the termination. Cernuto v. United Cabinet Corp., 595 F.2d 164 (3rd Cir. 1979); Monsanto Co. v. Spray-rite Service Corp., ___ U.S. ___, 104 S.Ct. 2378, reh'g denied, 104 S.Ct. 1464 (1984).

Section 1 of the Sherman Act has been used to challenge certain aspects of the relationship between suppliers and distributors in the petroleum industry. A recent example is the settlement of long-standing litigation between a class of current and former gasoline service station dealers and fifteen major oil companies. In Bogosian v. Gulf Oil Corp., et al., Nos. 71-1137 and 71-2543 (E.D. Pa., filed 1971) the service station dealers charged the oil companies with violating Section 1 of the Sherman Act by combining to impose illegal restraints on the dealers. Some of the allegations included the conditioning of leases for stations on the dealers' agreement to buy all of their gasoline supplies from the lessor, and conditioning the right to use the service stations' trademark and trade name on the dealers' purchase of their gasoline supplies from the trademark owner. On the eve of trial, settlements were reached between the dealers and the thirteen remaining defendants.11/ In the aggregate, these thirteen defendants agreed to a cash payment of $25 million and injunctive relief that generally provides a method by which a dealer may "de-brand" his leased station or buy and sell another brand of gasoline through

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11/ Two defendants, Sun Oil and Getty Oil Co., settled in 1981.

separately installed tanks and pumps. It is too early to tell whether these protections will have any significant impact on independent dealers. It should also be noted that this litigation took fourteen years to come to trial.

In summary, Section 1 of the Sherman Act does offer protection to dealers who are the victims of conspiratorial action by suppliers, or a supplier and competing dealer. However, such litigation can be difficult because of the expanding use of the rule of reason analysis and the possibility of lengthy trial proceedings.

b. Section 2 of the Sherman Act.

Section 2 of the Sherman Act prohibits monopolization, attempts to monopolize, and conspiracies to monopolize any part of trade or commerce. In order to establish monopolization, one must prove that the defendant has monopoly power and that the defendant has deliberately acquired or maintained that monopoly power. Monopoly power is defined as the power to control prices or exclude competition. U.S. v. E.I. DuPont DeNemours & Co., 351 U.S. 377 (1956). Market power can be inferred from the market share of the company. U.S. v. Grinnell Corp., 384 U.S. 563 (1966).

One of the most difficult problems that courts have had to deal with under Section 2 has been the charges of "predatory pricing" by large firms for the purpose of destroying their competition and obtaining a monopoly position. This is a common complaint in the petroleum industry. Courts are faced with distinguishing between desirable "vigorous competition" and

undesirable predatory pricing. Since Areeda and Turner's seminal article on predatory pricing in 1975,12/ the courts have increasingly used economic analysis in drawing the line between competitive pricing and predatory conduct. The courts have moved away from a judicial emphasis on proof of predatory intent in identifying predatory pricing, in favor of an economic analysis of a firm's pricing as related to its costs.13/

2. Federal Trade Commission Act.

Section 5 of the FTC Act declares that "[u]nfair methods of competition in or affecting commerce ... are hereby declared unlawful."14/ The FTC Act has been used as a means to supplement the Sherman Act. The Commission has sole authority to enforce the ban against unfair methods of competition. The Supreme Court has held that the Commission can enforce Section 5 against conduct which violates the Sherman Act or which constitutes an "incipient" Sherman Act violation. FTC v. Cement Institute, 33 U.S. 683 (1948); Fashion Originators Guild v. FTC, 312 U.S. 457. The Supreme Court has also interpreted FTC Act as supplementing the Clayton Act. Atlantic

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12/ Areeda & Turner, "Predatory Pricing and Related Practices Under Section 2 of the Sherman Act," 88 Harv. L. Rev. 692 (1975).

13/ See, e.g., Wm. Inglis & Sons Baking Co. v. ITT Continental Baking Co., Inc., 668 F.2d 1014 (9th Cir. 1981, as amended 1982), cert. denied 103 S.Ct. 57 (1982); Superturf, Inc. v. Monsanto Co., 660 F.2d 1275 (8th Cir. 1981); Northeastern Telephone Co. v. American Telephone & Telegraph Co., 651 F.2d 76 (2d Cir. 1984).

14/ 15 U.S.C. § 45(a)(1).

Refining Co. v. FTC, 381 U.S. 357 (1965). Therefore, the substantive interpretation of Section 5 is similar to Sherman §§ 1 and 2.

In 1973, the FTC filed a shared monopoly case against eight major oil companies charging a myriad of anticompetitive violations at all levels of petroleum distribution. In re Exxon Corp., FTC Docket No. 8934 (1973). The case was voluntarily dismissed by the Commission in 1981 as being outdated because of the changing structure of the petroleum industry.

B. Robinson-Patman Act.

The Robinson-Patman Act was enacted in 1936 as an amendment to Section 2 of the Clayton Act in an attempt to protect small businesses - especially small grocery and drug stores - from unfair competition by chain stores and other large-volume rivals. The Act seeks to protect competition among firms which purchase their supplies from common suppliers from being distorted by discriminatory pricing by these suppliers in favor of the large firms. The Act was passed during a period of economic crisis and little consideration was given to its possible conflict with other antitrust statutes.

The Robinson-Patman Act may be enforced by private parties, the Federal Trade Commission through cease and desist proceedings, or by the Department of Justice through civil injunction suits and criminal prosecution. As a practical matter, neither enforcement agency at the present time enforces the Act.

The Department of Justice has not been active in the enforcement of the Act for at least thirty years, and more recently the Federal Trade Commission has all but ceased enforcement as well.15/

Although the Robinson-Patman Act reflects a populist, anti-big business bias, it is important to note that certain sections retain a requirement that there be an anticompetitive impact. Only price discriminations under Section 2(a) which have a reasonable probability of injuring competition are prohibited, and even then, defenses of cost justification and meeting competition are available. The Supreme Court has more recently made a greater effort to construe the Robinson-Patman Act provisions in harmony with the more general body of antitrust law and the goal of economic efficiency.16/

The principal provisions of the Act are as follows:

a. Section 2(a) - prohibits price discrimination by a seller that may substantially affect competition;

b. Section 2(b) - provides a "meeting competition" defense;

c. Section 2(c) - prohibits payment or receipt of certain "brokerage" payments;

d. Section 2(d) - prohibits discriminatory advertising and promotional allowances by a seller,

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15/ See e.g., U.S. Department of Justice Report on the Robinson-Patman Act (1977).

16/ See, e.g., Great Atlantic & Pacific Tea Co. v. FTC, 440 U.S. 69 (1979); and Falls City Industries, Inc. v. Vanco Beverage, Inc., 103 S.Ct. 1282 (1983).

without regard to any effect on competition;

e. Section 2(e) - prohibits provision of discriminatory promotional services or facilities by a seller without regard to any effect on competition;

f. Section 2(f) - prohibits a buyer from knowingly inducing a price discrimination which would be illegal if a seller granted it.

1. Section 2(a)

In order to find an unlawful price discrimination under Section 2(a) there must be: (1) two sales; (2) by the same seller; (3) at different prices; (4) to different buyers; (5) of commodities; (6) of like grade and quality; (7) in interstate commerce; (8) for use, consumption or resale within the United States; (9) resulting in injury to competition with the seller (primary line injury), with a favored buyer (secondary line injury), or with the customer of a buyer (tertiary line injury). The discriminatory price, however, can be justified if it is: (1) cost justified; (2) given in good faith to meet competition; (3) in response to changing market condtitions.

It is settled that the prohibited discrimination is a net difference in price. FTC v. Anheuser-Busch, Inc., 363 U.S. 536 (1960). Computation of the net price requires adjustment for discounts and rebates. Discriminatory sales terms, such as credit and prompt payment discounts, may result in discriminatory prices. See Craig v. Sun Oil Co., 515 F.2d 221 (10th Cir. 1975), cert. denied, 429 U.S. 829 (1976).

Unlike other antitrust statutes, an effect on commerce is not sufficient to establish a violation under the Robinson-Patman Act. The Act requires that the seller must be engaged in commerce, that the discrimination must occur in the course of that commerce, and the commodities must be sold for use, consumption or sale within the United States.

Section 2(a) relates only to discrimination in commodities, and the general rule is the Act does not apply to services. See, e.g., Export Liquor Sales, Inc. v. Ammer-Warehouse Co., 426 F.2d 251 (6th Cir. 1970), cert. denied, 400 U.S. 1000 (real estate leases not covered). Mixed goods and services are analyzed as to their dominant nature. Rowe v. Hamrah, 1984-2 Trade Cas. para. 66,261.

The two transactions being compared for purposes of determining the discrimination must both be sales. Bruce's Juices, Inc. v. American Can Co., 330 U.S. 743 (1947). For example, the Act does not apply to leases or consignments, nor does it apply to a mere offer to sell even though the prospective purchaser may have failed to purchase because of the high, discriminatory price. Exchange agreements among petroleum refiners would not be sales. The courts appear to be split over the question of whether transfers of commodities between corporate affiliates are "sales" for purposes of the Act. Recent 6th Circuit and 7th Circuit decisions appear to differ on whether there can be "sales" to company-owned gasoline stations. Compare Shavrnoch v. Clark Oil & Refining Corp., 1984-1

Trade Cas., para. 65,832 (6th Cir. 1984) and O'Byrne v. Cheker Oil Co., 1984-1 Trade Cas., para. 65,852 (7th Cir. 1984).

Both customers must be purchasers from the same seller. However, if a purchaser buys from a direct customer of a seller where the seller exercises control over the terms of sale to the indirect buyer, there can still be discrimination. Barnosky Oils, Inc. v. Union Oil Co., 1981-2 Trade Cas., para. 64,374 (6th Cir. 1981).

The commodities must also be of like grade and quality. The distinction between a private label and a national brand may not constitute a difference in greater quality. However, the price difference between such brands may in reality reflect consumer preference and thus may not cause competitive injury. FTC v. Borden Co., 383 U.S. 637 (1966); on remand, Borden Co. v. FTC, 381 F.2d 175 (5th Cir. 1967).

A violation of Section 2(a) cannot occur unless there is a reasonable probability that the discrimination will injure competition as a whole. FTC v. Morton Salt Co., 334 U.S. 37, 50 (1948). There can be injury at any one of three levels. Primary line injury is injury at the seller's level. The standard for injury at the seller's level is more strict than the test for injury at the customer's level. In general, the principal basis for establishing primary line injury is proof of predatory pricing by the seller. Decisions in the 5th, 9th and 10th Circuits have generally required a price below marginal or average variable cost.

International Air Indus., Inc. v. American Excelsior Co., 517 F.2d 714, 720-24 (5th Cir. 1975), cert. denied, 424 U.S. 943 (1976); Janich Bros., Inc. v. American Distilling Co., 570 F.2d 848 (9th Cir. 1977), cert. denied, 439 U.S. 829 (1978); and Pacific Engineering & Production Co. v. Kerr-McGee Corp., 551 F.2d 790, 798-99 (10th Cir. 1977), cert. denied, 434 U.S. 879 (1977).17/ Both the FTC and private Robinson-Patman Act cases are more common at the secondary (customer) level or tertiary (customer) level. In determining whether there is a reasonable probability that competitive injury will occur, the courts and the FTC have inferred injury from chronic, substantial discrimination, with respect to products where competition is intense and profit margins are low. Falls City Indus., Inc. v. Vanco Beverages, Inc., 103 S.Ct. 1282, 1289 (1983). Although most cases indicate that the discrimination must be likely to injure competition as a whole, there are some cases which infer injury to competition from injury to a single competitor. See, e.g., Falls City Indus., Inc. v. Vanco Beverages, Inc., supra, (plaintiff argued injury to itself, but the court found competitive injury).

17/ In Utah Pie Co. v. Continental Baking Co., 387 U.S. 685 (1967), the Supreme Court affirmed judgment for the plaintiff on the basis of discriminatory sales below cost, but gave no definition of cost. The Court appeared to equate a drastically declining market price structure with competitive injury. This decision has been consistently criticized for its lack of economic rationale.

The principal defenses to a charge of price discrimination are the cost justification provision of Section 2(a) and the meeting competition defense of Section 2(b). The cost justification defense is difficult and rarely upheld. The burden of proof clearly rests on the defendant. FTC v. Morton Salt Co., 334 U.S. 37 (1948). The meeting competition defense has proven to be the most useful defense under the Act. Generally, meeting competition requires that the seller "meet but not beat" the competitive price, but there is some recognition of commercial realities, e.g., National Dairy Products Corp., 70 FTC 79 (1966), aff'd, 395 F.2d 517 (7th Cir.), cert. denied, 393 U.S. 977 (1968). The defense will not be successful if the seller knows the competitor's price is unlawful. Cadigan v. Texaco, Inc., 492 F.2d 383 (9th Cir. 1974). This defense is not available to excuse a lower price granted in order to permit a customer of the supplier to meet competition. FTC v. Sun Oil Co., 371 U.S. 505 (1963).

Sections 2(d) and 2(e) were enacted to reach hidden price concessions exacted by large buyers in the guise of payments for advertising or promotional services, which permitted the favored customers to shift a portion of their costs to the seller. These sections prohibit a seller from furnishing "payment of anything of value" or "services or facilities" "to or for the benefit of a customer" in connection with the resale of the seller's product, unless the seller makes such payments or services available on "proportionally equal terms" to all competing customers. Unlike

Section 2(a), there is no requirement of competitive injury under these sections.

Liability for violations of the Robinson-Patman Act are the result primarily of FTC cease and desist administrative orders (penalties of up to $10,000 per day per violation) (15 U.S.C. § 45(i)), and lawsuits by private litigants, who may obtain treble damages, costs including reasonable attorney's fees and injunctive relief (15 U.S.C. § 26). In addition, there are criminal sanctions available under Section 3 of the Act, but as a practical matter they are no no longer used. Since neither the Justice Department nor the FTC think price discrimination is necessarily anticompetitive, most enforcement is by private parties.

C. Mandatory Petroleum Price and Allocation Regulations.18/

1. Economic Stabilization Act.

Petroleum prices were first subject to regulation in August of 1971 as part of the 90-day wage and price freeze imposed by President Nixon pursuant to the authority granted to him by the Economic Stabilization Act of 1970. Petroleum products were treated no differently than any other commodity. Prices at every level of the petroleum distribution chain were froze at their August 1971

18/ This discussion of the mandatory price and allocation regulations draws heavily from the following sources: The State of Competition in Gasoline Marketing, at ch. VII and Appendix A, U.S. Dept. of Energy (January 1981); W. Lane, The Mandatory Petroleum Price and Allocation Regulations: A History and Analysis, Rept. to the American Petroleum Institute (May 1981).

levels. Generally, cost increases were prohibited from being passed along.19/

Subsequent phases of the price regulations included Phase II limits on increases in wholesale prices. Under Phase II wholesale prices were only permitted to increase to reflect cost increases after the freeze from November 15, 1971 until January 10, 1973. Term limit pricing arrangements between petroleum companies and the government permitted price increases for a range of products provided the weighted average of the price increase was within the companies historical profit margin. However, gasoline No. 2 fuel oil and residual oil were excluded from coverage and effectively remained frozen at August 1971 prices.

Phase III began on January 11, 1973. The Phase II controls were extended essentially on a voluntary basis as the reporting requirements were lifted on all but companies with over $250,000 million in sales. Soon thereafter on March 6, 1973 mandatory controls were imposed on crude oil and petroleum sales of

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19/ An exception to this general rule permitted cost increases in the costs of imports to be passed along. 36 Fed. Reg. 727-30 (1971). However, in order to be permitted to do so, an oil company was required to maintain separate facilities for imported product. It has been argued that this created a disincentive to imports since no oil company maintained such facilities. W. Lane, The Mandatory Petroleum Price and Allocation Regulations: A History and Analysis, Rept. to the American Petroleum Institute, p.8 (May 1981). It is also argued that the imposition of the freeze during summer when fuel oil prices were lowest created a market distortion which contributed to shortages in heating oil during the winter of 1972-1973. Id. at 9.

firms with sales in excess of $250,000 million, that is on the 24 largest petroleum companies. On June 13, 1973 a freeze lasting until September 7, 1973 was imposed by executive order on all consumer prices.

The Phase IV regulations which became effective on September 7, 1973 were a comprehensive set of regulations specifically designed to govern the pricing of petroleum products by each segment of the industry. See generally 10 C.F.R. Part 212. The Phase IV regulations distinguished between crude oil produced from preexisting facilities and from new facilities. The Phase IV regulations permitted new crude to be sold at a market price to create an incentive for new crude production. The Phase IV refiner regulations fixed prices at May 15, 1973 levels permitting only cost increases attributable to increases in crude oil and labor and operating costs. The Phase IV dealer and jobber regulations similarly restricted price increases. By September 1973, the federal government established the policy that the ceiling prices were to be periodically revised in order to permit a pass through of increased crude costs.

During this time shortages led to the passage of an amendment to the Economic Stabilization Act giving the President authority to allocate crude oil and petroleum products. Pursuant to that grant of authority, a voluntary allocation program was established in May 1973, followed by mandatory controls on propane and heating oil in October and November. Legislation was also

proposed to require mandatory controls. Views on the need for allocation ranged from a belief that the supply problems were being caused by a conspiracy of the major oil companies to drive the smaller firms and independents out of business, to the contention of the majors that government price regulations under the Economic Stabilization Act had prohibited normal market forces to operate and contributed to the shortages.

2. Emergency Petroleum Allocation Act.

The Emergency Petroleum Allocation Act of November 1973, 15 U.S.C. § 751 et seq. (EPAA), authorized the President to promulgate regulations mandating that crude oil and petroleum products produced or refined in the United States be totally allocated for use by ultimate consumers within the United States at prices established by regulation. 15 U.S.C. § 753. The EPAA also continued the Phase IV priority for users of petroleum products in food production, fuel production, public health and safety and mass transit. The EPAA also required the President to ensure the "competitive viability" of various types of independent refiners and marketers. 15 U.S.C. § 753(b)(1)(D).

By Executive Order on December 4, 1973, the President created the Federal Energy Office to draft and implement the EPAA regulations. The Federal Energy Administration (FEA) became effective on June 27, 1974. It replaced the Federal Energy Office which had been created by executive order on December 4, 1973 to implement the EPAA regulations. The functions of the FEA were later

transferred to the Department of Energy (DOE) under the DOE Organization Act. The initial price and allocation regulations were published on January 15, 1974. These regulations had the effect of continuing the Phase IV Regulations first imposed in September 1973 under the authority of the Economic Stabilization Act of 1970 and originally scheduled to end in the Spring of 1974. The EPAA regulations which applied to producers, refiners, jobbers and dealers were amended 200 times until decontrol became effective on January 28, 1981.20/ While enacted after the October, 1973 Yom Kippur War and the announcement of OPEC oil embargo, Senator Henry Jackson had initially introduced legislation proposing mandatory allocations in May 1973.

a. EPAA Price regulations.

The gasoline price regulations used a base price of May 15, 1972 with an increased cost formula to determine the ceiling price. The refiner price regulations applied to an integrated firm basis preventing refiners from using intra company sales to increase costs. Prices were set by "concerned class of purchaser" which was defined in terms of the refiner's price based upon differences in grade, quality, location, type of purchaser, volume, and terms and conditions of sale or delivery. See generally, 10 C.F.R. Part 212.

20/ W. Lane, The Mandatory Petroleum Price and Allocation Regulations; A History and Analysis at 55, Rept. to the American Petroleum Institute (May 1981).

The equal application rule penalized refiners which did not distribute increased costs equally among various classes of purchases. Exceptions to the rule permitted a 3 cent differential among marketing regions and between refiner owned and operated stations and other dealers. This rule was eliminated in November 1980.

Jobbers and retailers were subject to price rules similar to those applicable to refiners. Both were restricted to their May 15, 1973 weighted average selling price to the concerned class of purchaser. Certain increased product and nonproduct costs could be added; 3 cents for retail sales and 1-3/4 cents for wholesale sales by jobbers depending upon 1973 sales volume. Effective January 1, 1979 notwithstanding the cents per gallon limits, retail service stations were also permitted to pass through costs attributable to gasoline vapor systems mandated by the EPA and increased rental costs charged. The regulations were significantly changed effective on July 16, 1979 to convert the price structure for sales by retailers to a formula based upon product acquisition cost plus a national average fixed gross margin ceiling (stated in cents per gallon). The formula was to be adjusted semiannually for inflation plus taxes. Similar regulations were promulgated for jobbers and jobber-retailers on May 2, 1980. For resales of gasoline, the maximum price was acquisition cost, plus a fixed margin, plus taxes. The July 1979 changes to the regulations ended the ability of retailers to "bank" unrecovered costs (providing

adequate records of nonrecovery were maintained) and to pass such costs along at a future date. Reseller "banks" were eliminated in May 1980.

b. EPAA Allocation Regulations.

The regulations promulgated under the EPAA established an allocation system which basically froze supplier/purchaser relationships as of the base period. See generally 10 C.F.R. Part 211. An important feature of the regulations is that while suppliers were required to supply their base period customers, the base period customers were not required to necessarily purchase from their base period supplier. The regulations also established an elaborate priority classification and classification level for bulk purchasers. Agricultural and defense purchasers received 100% of base purchase and all others had a proportionate share. A five percent state set-aside program was established. In some instances suppliers could end up with a surplus under the allocation system. All suppliers were subject to direction by DOE in connection with redistribution of any surplus, but only large suppliers are required to report any surplus to DOE. An appeals process was established to provide a mechanism for adjustments for service stations upon a showing of serious hardship.

c. Decontrol.

On January 23, 1981 President Reagan by executive order lifted the EPAA price and allocation regulations.21/ The reporting

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21/ Ex. Ord. No. 12287, 46 Fed. Reg. 9909 (Jan. 28, 1981).

requirements were continued until DOE took steps to modify or repeal them. The State set-aside, mass transit and Canadian allocation program remained effective until March 31, 1981.

D. Petroleum Marketing Practices Act.

The Petroleum Marketing Practices Act, 15 U.S.C. §§ 2801-2841 (PMPA), was passed in 1978 after five years of debate.22/ Title 1 of the Act, which is also known as the Dealers' Day In Court Act, prohibits an oil franchisor from terminating or failing to renew franchisee except for good cause. 15 U.S.C. §§ 2801-2806. Title II of the PMPA establishes certain octane testing and disclosure requirements. 15 U.S.C. §§ 2821-2824. Title 2 is basically a consumer protection measure primarily to be enforced by the Federal Trade Commission. Title 3 required the preparation by the U. S. Department of Energy of a study relating to subsidation of motor fuel marketing. 15 U.S.C. § 2841. The DOE completed that study in January 1981.23/

The PMPA basically sets forth the circumstances under which termination of a franchisee is permissible and the procedures a franchisor must follow in order to terminate a franchisee.24/ The

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22/ Comment, Retail Gasoline Franchise Terminations and Nonrenewals Under Title I of the Petroleum Marketing Practices Act, 1980 Duke L.J. 522, 523.

23/ The State of Competition in Gasoline Marketing, U.S. Dept. of Energy (January 1981) (DOE Report I). See Note 41, infra.

24/ See generally, Annot., Termination or Nonrenewal of Franchise to Sell Motor Fuel in Commerce under Petroleum Marketing Practices Act, 53 A.L.R. Fed. 348 (1981).

PMPA establishes federal court jurisdiction for actions brought by franchisees for terminations which allegedly violate the PMPA. The Act also provides a standard for the granting of a preliminary injunction which is more lienient than the general test at equity for a preliminary injunction. See Gilderhus v. Amoco Oil Co., 470 F. Supp. 1302 (D. Minn. 1979).

Before a franchisor can terminate a franchisee under the PMPA, the franchisor must give the franchisee notice prior to termination. 15 U.S.C. § 2804. The amount of notice varies from 60 to 120 days depending on the reason for termination. Notice must be given after the franchisor discovers or should discover the reason for termination. 15 U.S.C. § 2802(b)(2)(A).25/ This provision is intended to prevent a franchisor from using a preexisting complaint against the franchisee as a reason for termination. In addition to providing notice to the franchisee of an intended termination, the franchisor must also provide notice of termination to the governor of the state when the termination is the result of the franchisor withdrawing from the state. 15 U.S.C. § 2804(b)(1).

In addition to the notice requirements, the franchisor may only terminate a franchisee for "good cause" as defined under the PMPA. 15 U.S.C. § 2802. Under the PMPA the franchisor may only terminate the franchisee if (1) the franchisee has failed to comply

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25/ The constructive knowledge provision was objected to by the oil companies as making it extremely difficult for franchisee termination. Comment, Gasoline Franchise Terminations, supra at 532 n.57.

with certain operational provisions of the franchise agreement which are "both reasonable and of material significance to the franchise relationship", 15 U.S.C. § 2802(b)(2)(A) (e.g., failure to pay rent, failure to comply with a minimum gallonage requirement); (2) if the franchisee fails to exert good faith efforts to carry out the provisions of the franchise, 15 U.S.C. § 2802(b)(2)(B); (3) if an event occurs which is relevant to the franchise relationship and makes termination "reasonable" (e.g., fraud by the franchisee, bankruptcy of the franchisee, loss of title to the leasehold) 15 U.S.C. § 2802(b)(2)(C); (4) if the franchisor and franchisee mutually agree to terminate the franchise, 15 U.S.C. § 2802(b)(2)(D); or (5) if the franchisor is withdrawing from the market area. 15 U.S.C.§ 2802(b)(2)(E).

The grounds for nonrenewal under the PMPA are the same as the grounds for termination. However, in addition there are other statutory provisions which apply only to nonrenewal of franchises. 15 U.S.C. § 2802(b)(3). The franchisor may refuse to renew a franchisee (1) if the parties cannot agree after good faith negotiations to the terms of renewal, 15 U.S.C. § 2802(b)(3)(A); (2) if the franchisee has been given notice of complaints received by the franchisor about the franchisor and the franchisee did not promptly take corrective action, 15 U.S.C. § 2802 (b)(3)(B); (3) if the franchisee fails to operate clean and safe premises after being given an opportunity to take corrective action, 15 U.S.C. § 2802(b)(3)(C); or (4) instances where the location is uneconomical

to the franchisor or the franchisor in good faith converts the location to another use, 15 U.S.C. § 2802(b)(3) (D). The Act specifically provides that the determination by the franchisor that continuation of the franchise would be "uneconomical" cannot be based on a conversion of the premises from a leased marketing operation to an operation directly by the franchisor. 15 U.S.C. § 2802(b)(3)(D)(ii).

The PMPA provides that a franchisee may bring an action in federal court if a termination or nonrenewal occurs which the franchisee believes was in violation of the PMPA. 15 U.S.C. § 2805. Under the PMPA a franchisee is entitled to a preliminary injunction if the franchisee proves that there are "sufffciently serious questions going to the merits to make . . . a fair ground for litigation" and demonstrates that the hardships imposed on the franchisor if temporary relief is granted will be less than the hardships on the franchisee if it is not granted. 15 U.S.C. § 2805(b)(2). Cases brought under the PMPA have recognized that the standard for preliminary injunction is "significantly more lenient than the general equity standards for preliminary injunctions. Itin Oil Co. v. Mobil Oil Co., 527 F. Supp. 898 (D. Mich. 1981); Sexe v. Husky Oil Co., 475 F. Supp. 135 (D. Mont. 1979); Gilderhus v. Amoco Oil Co., 470 F. Supp. 1302, 1303 (D. Minn. 1979). Ultimately, if a franchisee prevails on the merits, the franchisee is entitled to a permanent injunction and can obtain actual and punitive damages. 15 U.S.C. § 2805(b)(1) and (d). The franchisee's initial burden of

proof under the PMPA is to show only a prospective or actual termination or nonrenewal. Once the franchisee has made such a showing, the burden of proof shifts to the franchisor to prove that the franchisor has complied with the requirements of the PMPA. 15 U.S.C. § 2805(c). See Moody v. Amoco Oil Co., 734 F.2d 1200 (7th Cir. 1984), cert. denied, 105 S.Ct. 386 (1984); Siecko v. Amerada Hess Corp., 569 F. Supp. 768 (E.D. Pa. 1983); Rogue Valley Stations, Inc. v. Birk Oil Co., 568 F. Supp. 337 (D. Or. 1983).

There have been a number of cases under the PMPA. Cases have held that provisions of the Act as to notice of renewal and termination are to be strictly construed. Thompson v. Kerr-McGee Refining Corporation, 660 F.2d 1380 (10th Cir. 1981), cert. denied, 455 U.S. 1019 (1981); Escobar v. Mobil Oil Corp., 678 F.2d 398 (2d Cir. 1982); Mobil Oil Corp. v. Vachon, 580 F. Supp. 153 (D. Mass. 1983). One of the issues that has frequently arisen under the PMPA is the question of whether the PMPA is violated when the franchisor requires large lump sum rental payments. The courts have refrained from examining the reasonableness of the rent from a commercial point of view.26/ The courts have instead focused upon whether or not the rent determination was made in "good faith", that is, in the normal course of business as the result of a business practice that was not developed specifically to drive a dealer out of business. See e.g. Palmieri v. Mobil Oil Corporation, 682 F.2d 295, (2d Cir.

26/ Draft, Deregulated Gasoline Marketing, at page 97, U. S. Dept. of Energy (March, 1984).

1982); Meyer v. Amerada Hess Corp., 541 F.Supp. 321 (D.N.J. 1982); Ferriola v. Gulf Oil Corp., 496 F. Supp. 158 (E.D. Pa. 1980), aff'd 649 F.2d 859 (3d Cir. 1981).

Finally, it should be noted that the PMPA preempts any state law governing the termination or nonrenewal of franchise relationships that is not "the same" as the provisions of the PMPA. 15 U.S.C. § 2806. Cases have held that the PMPA has preempted state statutory and common law claims relating to terminations and nonrenewals of gasoline franchisees in California, Connecticut, Georgia, Illinois, Maryland, Missouri, New Jersey, Pennsylvania and Wisconsin.27/

E. Cash Discount Act.

The Cash Discount Act, 15 U.S.C. § 1666F provides that the issuer of a credit card may not prohibit a retail seller which accepts that credit card from offering a discount to induce the payment by cash rather than the use of a credit card. 15 U.S.C. § 1666F(a). The Act further provides that any discount from the

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27/ See Exxon Corp. v. Georgia Ass'n. of Retailers, 484 F. Supp. 1008, 1016-1018 (N.D. Ga. 1979); aff'd. sub. nom Exxon Corp. v. Busbee, 644 F.2d 1030 (5th Cir. 1981), cert. denied, 454 U.S. 932 (1981); Ted's Tire Service, Inc. v. Chevron, 470 F. Supp. 163, 165 (D. Conn. 1979); Brach v. Amoco Oil Co., 570 F. Supp. 1437, 1442-1443 (N.D. Ill. 1983), aff'd 677 F.2d 1213 (7th Cir. 1982); Huth v. B.P. Oil, Inc., 555 F.Supp. 191, 194 (D. Md. 1983); Clark v. Mobil Oil Corp., 496 F.Supp. 132, 134-135 (E.D. Mo. 1980); Siecko v. Amerada Hess Corp., 569 F. Supp. 768, 772-773 (E.D. Pa. 1983); Exxon Corp. v. Miro, 555 F. Supp. 234 (C.D. Cal. 1983); Meyer v. Amerada Hess Corp., 541 F. Supp. 321, 336 (D. N.J. 1982); Matter of Moody, 31 B.R. 216 (Bkrtcy. Wis. 1983), 734 F.2d 1200 (7th Cir. 1984).

regular price which is offered for the purpose of inducing payment by cash is not considered to be a finance charge provided that it is offered to all prospective buyers and its availability is clearly and conspicuously disclosed. 15 U.S.C. § 1666f(b). From 1976 until February of 1984, the Cash Discount Act also provided that the issuers of credit cards could not impose credit card surcharges on transactions. Prior to 1981 the amount of the cash discount was effectively limited to five percent.

Charges or processing fees which are imposed by oil companies on retailers for credit card sales have been held not to be cash discounts offered by the retailers. Instead, the court held that such charges constitute extra charges imposed upon the retailers. Thus, the court concluded that a Maryland statute which prohibited extra charges imposed by oil companies on retailers did not prohibit the retailers from offering cash discounts and, thus, was not a violation of the Cash Discount Act. Texaco, Inc. v. Hughes, 572 F. Supp. 1 (D. Md. 1982).

Legislation was proposed which would amend the Truth in Lending Act to prohibit oil companies from charging the franchise a processing fee for the use of the credit card.28/ Sponsors of the legislation argued that imposition of a processing fee permits the oil companies to charge twice for credit card services since credit card costs had traditionally been included as part of the cost to

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28/ H.R. 5362, 97th Cong. 2nd Sess.

dealers for gasoline. Opponents argued that permitting a processing fee to be charged would result in a lowering of gasoline prices to dealers and end subsidization of credit customers by cash customers. The proposed legislation was not enacted.

III. STATE LAWS AFFECTING PETROLEUM MARKETING.

A. Antitrust Laws.

Most states, including Minnesota, have state antitrust laws which in general reflect the same philosophy and prohibitions as the Sherman Act at the federal level. The Minnesota Antitrust Law of 1971, Minn. Stat. §§ 325D.49 - .66 (1984), is essentially a codification of federal case law interpreting substantive offenses under the Sherman Act. Federal case law, therefore, has been used to interpret the substantive provisions of the Minnesota law, at least insofar as they are not in conflict with the provisions of the Sherman Act. Campbell v. Motion Picture Machine Operators' Union, 151 Minn. 220, 186 N.W. 781 (1922); State v. Duluth Board of Trade, 107 Minn. 506, 121 N.W. 39 (1909); State v. Robert L. Carr Co., 1978-1 CCH Trade Cas., para. 61,983 (Lyon County District Court). Section 325D.51 makes unlawful any "contract, combination, or conspiracy between two or more persons in unreasonable restraint of trade or commerce . . ." This is a codification of the "rule of reason" standard of the Sherman Act. Standard Oil Co. v. United States, 221 U.S. 1 (1911). Section 325D.52, like Sherman Act section 2, prohibits monopolization or attempts to monopolize. Section 325D.53, subd. 1, defines certain conduct as per se unlawful

under the Act. Willful violations of this section may be prosecuted as felonies pursuant to § 325D.56, subd. 2. Offenses defined as per se unlawful include horizontal price fixing, production limitations, market allocations, bid-rigging and joint refusals to deal. Other provisions of the law deal with exemptions (§ 325D.55), jurisdiction and scope of the act (§§ 325D.50, .65, and .66), statute of limitations (§ 325D.64), venue (§ 325D.65), and use of a judgment in favor of the state as prima facie evidence (§ 325D.62).

The Attorney General has primary responsibility for enforcing the Minnesota Antitrust Law. Minn. Stat. § 325D.59. If he has "reasonable cause to believe" a violation has occurred or is imminent, he may institute on behalf of the state or any of its political subdivisions a court action seeking "appropriate relief." Id.; see also, Minn. Stat. § 8.31. There are four basic civil remedies under the Act. The Attorney General may seek civil fines up to $50,000. Section 325D.56, subd. 1. Failure to comply with a judgment or decree is punishable by a fine up to $100,000. Id. Injunctive relief and treble damages, including attorney's fees, are available to any person, governmental body or the state who can prove actual damages sustained by reason of a violation. Minn. Stat. §§ 325D.57 and .58. The Attorney General may also seek to suspend or forfeit the right of a company to do business in the State of Minnesota. Section 325D.60.

The Minnesota Antitrust Law has been enforced against restrictive petroleum marketing practices in Minnesota. In State v. Budget Oil Company, et al., (Freeborn Cty. Dist. Ct. No. 28105, (1978)), the Attorney General obtained injunctive relief and civil fines in the amount of $71,500.00 for alleged price fixing among a number of petroleum companies. The Minnesota antitrust law has also been used to challenge alleged anti-competitive acquisitions in the petroleum industry. In 1978, the Attorney General brought a case against Koch Refining Company to enjoin its acquisition of Midwest Oil Company, a broker and jobber of petroleum products. State v. Koch Refining Co., No. 4-78-13 (D. Minn. 1978). The case was settled without any admission of wrongdoing for injunctive relief restricting Koch's ability to acquire any petroleum wholesalers for a period of four years.

B. Sales Below Cost And Minimum Mark-up Laws.29/

The economic problems of the Great Depression caused both state and federal legislators to enact legislation to stop or slow down the tide of small business failures. On the federal level, this effort culminated in the passage of the National Industrial Recovery Act ("NRA").30/ Although the NRA was declared unconstitutional,31/ both state and federal legislators enacted a

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29/ For an exhaustive treatment of Minnesota price discrimination and sales-below-cost laws, see Goodrich, "Minnesota Price Discrimination and Sales-Below-Cost Statutes: Should They Be Repealed, Amended, or Left Alone?" 5 Wm. Mitchell L. Rev. 1 (1979).

30/ Ch. 90, 48 Stat. 195 (1933).

31/ Schechter Poultry Corp. v. United States, 295 U.S. 495 (1935).

number of trade regulation laws similar to those embodied in the NRA. The Robinson-Patman Act amendments to section 2 of the Clayton Act are the prime example of such an act at the federal level. On the state level, in addition to laws similar to the Robinson-Patman Act, there were a number of unfair sales or unfair trade acts passed as well.32/ By the beginning of World War II, there were approximately thirty-eight states which had enacted some type of general law prohibiting sales below cost. Some of the early laws were struck down as unconstitutional on the grounds that they arbitrarily interfered with an owner's right to dispose of his property at the price he chose. See, e.g., Daniel Laughran Co. v.

32/ Although the federal antitrust laws have consistently prohibited contracts or agreements between a supplier and a reseller to fix the reseller's selling price, during the 1930's, many states enacted legislation which explicitly sanctioned agreements fixing minimum resale prices. In 1937, the United States Congress passed the Miller-Tydings Act, ch. 690, 50 Stat. 693, granting the state "fair trade" laws an exemption from the Sherman Antitrust Act. After passage of the Miller-Tydings Act, some manufacturers attempted to set the resale prices not only of firms which had signed fair trade contracts, but also of resellers who had not done so. In 1951, the Supreme Court in Schwegmann Bros. v. Calvert Distillers Corp., 314 U.S. 384, held this practice to be prohibited by the Sherman Act. In 1952, Congress passed the McGuire Act, ch. 745, 66 Stat. 632, which enabled states to pass fair trade laws containing "non-signer" clauses. Under such laws, a fair trade contract could be enforced against every reseller in the state if the manufacturer had obtained the signature of even one reseller to that contract. In 1977, Congress enacted the Consumer Goods Pricing Act, 89 Stat. 801, which repealed the Miller-Tydings and McGuire Acts effective March 11, 1976. Therefore, under present law, any contract or agreement between a supplier and a reseller to fix the reseller's selling prices is again per se illegal under section 1 of the Sherman Act. The Minnesota Fair Trade Act was subsequently repealed in 1978 (Act of Mar. 9, 1978, ch. 473, 1978 Minn. Laws).

Lord Baltimore Candy & Tobacco Co., 12 A.2d 201 (Md. Ct. of App. 1940); State v. Packard-Bamberger & Co., 123 N.J.L. 180 (1939); Commonwealth v. Zasloff, 338 Pa. 457, 13 A.2d 67 (1940). In many cases, the laws held to be unconstitutional did not impose any intent to harm a competitor as an element for the violation. In response to these early cases, many legislatures amended their state's laws to include such an intent requirement.

Minnesota has had a price discrimination and sales-below-cost statute of general application since 1937.33/ The present act, the Act Against Unfair Discrimination and Competition, Minn. Stat. §§ 325D.01-.08, contains both the prohibition against selling below cost and a presumption available in establishing a prima facie violation.34/ Minn. Stat. § 325D.04 contains the prohibition against sales below cost. That statute provides in part as follows:

> Any retailer, wholesaler, sub-jobber, or vending machines operator engaged in business within this state, who sells, offers for sale or advertises for sale, any commodity, article, goods, wares, or merchandise at less than the cost thereof to such vendor, or gives, offers to give or advertises the intent to give any commodity, article, goods, wares, or merchandise for the purpose or with the effect of injuring a competitor or destroying competition, shall be guilty of unfair discrimination; and, upon conviction, subject to the penalty therefor provided in section 325D.69, subdivision 2.

33/ Act of March 30, 1937, ch. 116, 1937 Minn. Laws 180.

34/ This statute also contains a prohibition against locality price discrimination, which will be treated more fully below.

The Act applies to retailers, wholesalers, sub-jobbers, and vending machine operators. It has two essential elements: (1) selling or offering to sell any commodity at less than cost, or giving or offering to give away any commodity; (2) for the purpose or with the effect of injuring a competitor or destroying competition.

The initial element requires establishment by the plaintiff of the cost of the commodity. Minn. Stat. § 325D.01, subd. 5 defines cost as applied to a wholesale or retail vendor as the lower of either actual current invoice or replacement cost, plus sales taxes and the cost of doing business. Competitive injury, the second element of a violation, can be established either by proving an intent to cause injury or proving actual injury.

There are several types of sales transactions that are exempt from the sales-below-cost prohibition. These sales include close-outs, sale of perishable goods to prevent loss by spoilage or depreciation, seasonal goods where style is a paramount feature, and damaged or deteriorated goods. Minn. Stat. § 325D.06 (1984). These exceptions require that notice be given to the public of the condition justifying the sale. Id. The act also exempts court-ordered sales.

The most important exemption is the good faith attempt to meet the legal prices of a competitor. Minn. Stat. § 325D.06 (1984). It should be noted that the meeting competition defense is available only when the price being met is a legal price, i.e., the

price is above cost and not charged for the purpose or with the effect of injuring a competitor or destroying competition. The process by which a seller determines whether his competitor's price is a legal price is very complex. Since 1957, the statute has been amended by providing a presumption that a competitor's retail price of less than eight percent above actual delivered invoice cost would be "prima facie evidence" that the price is not legal, and therefore the meeting competition defense would not be available to a competitor matching that price. Similarly, at the wholesale level, a price charged that is less than two percent above actual current delivered invoice cost is considered prima facie evidence of an illegal price. If a sale is made to meet a competitor's price that is itself below cost and therefore illegal, the seller cannot rely upon the meeting competition defense. In order to help the seller determine whether his competitor's price is legal, the statute provides that he may request the Attorney General35/ to ascertain and disclose to him within forty-eight hours "the current manufacturer's published list price less published trade discounts" for the commodity in question. Minn. Stat. § 325D.06 (1984). The statute makes no provision for ascertaining the price if the manufacturer does not have a "published list price".

35/ This role was originally filled by the Commissioner of the Department of Business Development. See Act of Apr. 27, 1957, ch. 822, § 3, 1957 Minn. Laws 1163. It was transferred to the Attorney General in 1967. Act of May 4, 1967, ch. 302, § 1(2), 1967 Minn. Laws 477.

Section 325D.08 establishes rebuttable presumptions that certain sales are in violation of the sales-below-cost prohibition. The minimum markups established by this section are the same as the presumptions of price legality in the context of establishing the defense of meeting a legal price of a competitor's contained in § 325D.06. In other words, the price for a commodity is considered to be below cost unless a retailer charges a minimum mark-up of eight percent over his cost and wholesalers and sub-jobbers establish a minimum mark-up of at least two percent above what they pay for the commodity. At the other end of the scale, sales at a price at least fifteen percent above what is paid for the product is an absolute defense against a charge of sales-below-cost. Minn. Stat. § 325D.08 (1984).

The second presumption required to establish a prima facie case is proof of a purpose or effect of injuring competition. State v. Applebaums Food Markets, Inc., 259 Minn. 209, 106 N.W.2d 896 (1961). Therefore, although the presumptions appear to make the task of proving a violation much easier, in reality the necessary element of purpose or effect of injuring competition still must be established even for a prima facie case.

Willful violation of the sales-below-cost statute is a misdemeanor. Minn. Stat. § 325D.69, subd. 2 (1984). In addition, any director, officer, or agent of any firm or corporation who knowingly assists or aids directly or indirectly in the violation also commits a misdemeanor. Id. More importantly, any person who

has been injured by reason of a sales-below-cost violation may sue for both injunctive relief and for the amount of actual damages suffered by him. Minn. Stat. § 325D.70 (1984). Additional remedies are available in Minn. Stat. § 8.31 (1984), which permits an injured person to recover damages and costs, including attorney's fees. In addition to the private remedies, the Attorney General may sue for injunctive relief and for civil penalties not to exceed $25,000 against any person found to have violated the sales-below-cost statute. Minn. Stat. § 8.31 (1984).

Although the original Minnesota sales-below-cost statute was found to be unconstitutional in Great Atlantic & Pacific Tea Co. v. Ervin, 23 F.Supp. 70 (D. Minn. 1938) (per curiam), the present act was upheld in McElhone v. Geror, 207 Minn. 580, 292 N.W. 414 (1940). Beyond settling the constitutional question, there has been very little definitive interpretation of the sales-below-cost provisions. In State v. Wolkoff, 250 Minn. 504, 85 N.w.2d 401 (1957), the state charged five supermarkets with advertising and selling ketchup, coffee and sugar below cost. The Supreme Court affirmed the trial court's finding that the advertisements and sales were not made with the required purpose or effect of injuring and destroying competition. In State v. Applebaum's Food Markets, Inc., 259 Minn. 209, 106 N.W.2d 896 (1960), the Supreme Court reversed a temporary injunction granted by the trial court, holding that a showing of purpose or effect of injuring a competitor or destroying competition was necessary before such action could be taken. The

court reemphasized the requirement that a mere sales below cost is not sufficient to establish a violation; rather, it is also necessary to prove a purpose or effect of injuring a competitor or destroying competition. In so ruling, the court implicitly rejected the inference that proof of sales below cost in and of themselves meant that a competitor was injured merely by losing those sales. In Twin City Candy & Tobacco Co. v. A. Weisman Co., 276 Minn. 225, 149 N.W.2d 698 (1967), the Supreme Court further emphasized the requirement that sales below cost in and of themselves are not constitutionally sufficient to establish a violation of a state statute. In that case, the Supreme Court struck down as unconstitutional the state Unfair Cigarette Sales Act, holding that the prohibition against sales of cigarettes below cost without any requirement of proof that the sales are with the intent or effect of injuring competition was unconstitutional.36/ In Red Owl Stores, Inc. v. Comm'r of Agriculture, 310 N.W.2d 99 (Minn. 1981), the

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36/ Some state courts have upheld the constitutionality of price discrimination and sales-below-cost statutes which contain no requirement of anticompetitive purpose or effect. See, e.g., May's Drug Stores, Inc. v. State Tax Comm'n, 242 Iowa 334, 45 N.W.2d 245 (1950). The question whether either intent or effect is necessary in order for Minnesota's price discrimination and sales-below-cost laws to be constitutional is unsettled. In Twin City Candy & Tobacco Co. v. A. Weisman Co., 276 Minn. 225, 149 N.W.2d 698 (1967), the Court held that either intent or effect is constitutionally required to uphold a Minnesota sales-below-cost law. But in State v. Lanesboro Produce & Hatchery Co., 221 Minn. 246, 21 N.W.2d 792 (1946), the Supreme Court upheld a price discrimination statute dealing with farm products that required neither purpose nor effect. See, Goodrich, supra, at 36-48.

Supreme Court upheld the constitutionality of the statutory definition of "cost of doing business" in section 325D.01 and also upheld a finding of intent or effect of injuring competition or a competitor based on the testimony of grocers that they had lost business to Red Owl.

C. Price Discrimination Laws.

Minnesota laws contain three separate price discrimination provisions that apply to sales of petroleum products. All three statutes prohibit locality price discrimination only, and do not cover price discrimination between purchases in the same locality. Compare Minn. Stat. § 17.15 (1984) (prohibition against discrimination in the purchase of farm products, including "between persons in the same community"). Two of the provisions are statutes of general application. Minn. Stat. § 325D.03 (1984) prohibits the sale or furnishing of a commodity at a lower price in one section of the state than the person charges in another section of the state "for the purpose or with the effect of injuring a competitor or destroying competition." The sales-below-cost provision of § 325D.04 also contains a prohibition against locality price discrimination. The elements under this section are roughly comparable to those for § 325D.03. They include a requirement that there be a sale or offer of sale of goods in any part of the state at prices lower than those charged by the seller elsewhere in the state, for goods of like quality and grade, when the effect of the lower price may be "substantially to lessen competition or tend to

create a monopoly in any line of business, or to injury, destroy, or prevent competition with the person selling at such lower prices." The third provision deals specifically with petroleum products. Minn. Stat. § 325D.67 (1984). That provision prohibits any person engaged in the production, manufacture, or distribution of petroleum or any of its products from "intentionally, or otherwise," discriminating in price in the sale of petroleum products between different sections, communities, or cities of the state "for the purpose of destroying the business of a competitor or creating a monopoly in any locality." Violation of this provision can be prosecuted as a gross misdemeanor, with fines up to $3,000 and imprisonment in the county jail for not more than one year. The injunctive and damage provisions of § 325D.70 and § 8.31 are also available for this section. Therefore, private parties injured by such discrimination may recover damages and attorneys' fees. See, e.g., Minn. Stat. § 8.32, subd. 3a (1984).

One of the anomolies of this statute is that the remedies provided are cumulative and are not to be construed as repealing any other act. Therefore, the provisions of Minn. Stat. §§ 325D.03 and 325D.04 also apply to the sale of petroleum. This triple exposure points up an inconsistency between the laws. Whereas under the two statutes of general application, the seller would have a meeting competition defense, under the specific petroleum product locality discrimination statute there is no meeting competition defense.

There are also substantial differences between the two general locality price discrimination provisions of Minn. Stat. §§ 325D.03 and 325D.04 (1984). Section 325D.03 applies to producers, manufacturers and distributors, whereas 325D.04 applies to retailers, wholesalers, sub-jobbers and vending machine operators. Therefore, arguably the two sections would differ as to the persons covered, especially at the retail level. Under Section 325D.03, if a retailer does not qualify under the legal definition of distributor, a retailer would not be covered by that provision, but only by Section 325D.04. Section 325D.04, on the other hand, appears not to cover manufacturers and producers, which are clearly covered under Section 325D.03. Another distinction is the standard of competitive injury that must be shown to establish a violation for these two sections. Section 325D.03 applies when a seller discriminates "for the purpose or with the effect of injuring a competitor or destroying competition." On the other hand, Section 325D.04 applies to discrimination "where the effect of such lower prices may be substantially to lessen competition or tend to create a monopoly . . . , or to injury, destroy or prevent competition." Therefore, Section 325D.04 appears to apply when injury is threatened or incipient, whereas Section 325D.03 seems to require proof of intent or proof of actual injury caused by the price discrimination.

It is also unclear under both provisions whether the statutes prohibit only "primary" line injury or also extend to "secondary" or "tertiary" line injury as well. These terms derive from court interpretations of the Robinson-Patman Act. Primary line discrimination refers to price discrimination that injures the seller's competitors. Secondary line injury refers to injury of competitors of the seller's customer. Tertiary line injury would be injury to the customer of the seller's favored customer. Although there is no interpretive case law, the language of Section 325D.03 prohibits geographic price discrimination only when there is a purpose or effect of injuring a competitor or destroying competition. Section 325D.04 includes both injury to "competition with the person selling at such lower prices" and also any lessening of competition "in any line of business."

There are also inconsistencies in the defenses available under each provision. Section 325D.06 includes defenses of closeout sales, sales of seasonal, perishable or damages goods, and sales made pursuant to court order. But these apparently apply only to Section 325D.04 and not to Section 325D.03. There also appears to be a discrepancy between a defense related to difference in quantity between the two provisions. Under Section 325D.03, it is a defense to a charge of discrimination if the sales are made in differing "grade, quality, or quantity." In contrast, Section 325D.04 applies only to sales of "like qualities and grades." The law prior to 1939 applied to "like quantities" rather than "like qualities", so that

it is unclear whether quantity discounts can be used as a defense under Section 325D.04.37/ The cost defense under both sections also differs. Under Section 325D.03, cost savings in connection with differences in shipping costs can be considered. Section 325D.04, on the other hand, includes not only transportation costs, but also overhead expenses in the cost of doing business. Therefore, in determining differences in cost, Section 325D.03 concerns itself solely with variable costs, whereas Section 325D.04 permits justification of differences in total costs, i.e., the entire expense of operating a business.

No Minnesota decisions have rendered a definitive interpretation of the two general locality price discrimination statutes. The locality price discrimination provision of Section 325D.03 was upheld as constitutional in Great Atlantic & Pacific Tea Co. v. Ervin, 23 F.Supp. 70 (D. Minn. 1938) (per curiam). However, the holding of constitutionality was without detailed discussion of the provision. The constitutionality of the price discrimination provision in Section 325D.04 has not been decided.

D. Gasoline Marketing Divorcement Laws.

Since 1974, five states and the District of Columbia have enacted "divorcement" statutes designed to prohibit or limit the establishment of company-operated stations by vertically integrated oil companies.38/ Divorcement bills have also been proposed in a

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37/ See, Goodrich, supra, at 17-18.

38/ Conn. Gen. Stat. § 14-344a-b (1985); Del. Code Ann. tit. 6 § 2905 (supp. 1984); Fla. Stat. Ann. § 526.151(1) and (3)

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number of other states, including Minnesota, and at the federal level.39/ One state, Florida, has recently repealed its divorcement legislation.40/

Divorcement legislation has been the product of an effort to correct a perceived problem at the wholesale and retail levels of the petroleum industry. While many independent service station dealers have gone out of business since the early 1970's, the volume share of refiner-operated, gas-only outlets has steadily increased. Proponents of divorcement argue that vertically integrated oil companies who market at wholesale and retail levels compete unfairly with jobbers or independent service station dealers that they also supply. It is charged that integrated refiners can and do favor their own company-operated stations by raising the prices charged to jobbers or independent dealers, and by transferring gasoline supplies to their own stations at lower than market prices. The integrated refiner therefore, it is alleged, is engaging in predatory behavior against independent rivals in an effort to drive them out of business.41/

(Footnote Continued)

(repealed by ch. 85-74, § 13 (1985)); Md. Ann. Code art. 56 § 157E(c) (supp. 1985); Va. Code § 59.1-21.16:2 (1984); D.C. Code Ann. § 10-212 (1984).

39/ E.g., H.F. No. 1645 and S.F. No. 1603 (71st Sess. Minn. Leg. 1979); Motor Fuel Sales Competition Improvement Act of 1985, S. 1140.

40/ Fla. Stat. Ann. § 526.151, repealed by ch. 85-74, § 13 (1985).

41/ Title III of the Petroleum Marketing Practices Act, 15 U.S.C. § 2841, directed the Secretary of Energy to study possible

(Footnote Continued On Next Page)

Maryland's divorcement statute is representative of these laws. It provides that after July 1, 1974, no "producer or refiner of petroleum products" is permitted to open a retail service station in the state and operate it with company personnel. "The station must be operated by a retail service station dealer." The Maryland statute also provides that no producer or refiner can operate an existing retail service station after July 1, 1975.

In Exxon Corp. v. State of Maryland, 437 U.S. 117 (1978), the U.S. Supreme Court upheld the constitutionality of the Maryland divorcement statute. A majority of the Court held that there was no burden on interstate commerce because the statute was nondiscriminatory in nature, i.e., the statute applied equally to in-state as well as out-state refiners. The Court also held that it was no burden on interstate commerce because the law in no way changed the volume of gasoline sold in Maryland and therefore did not inhibit the flow of petroleum products across state lines. The Court also held that the nature of the petroleum industry was not so interstate in character that it could only be regulated by Congress.

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predatory pricing by major refiners, and to determine whether any such predatory pricing was a threat to competition at the retail level. The first report was submitted to Congress in January, 1981, and concluded that there was no evidences of subsidization at the retail level as part of a predatory campaign directed against independent dealers. DOE Report I. A second report was issued by DOE in March, 1984, which repeated the conclusions of the first report. DOE Report II at 3-19. Note: The methodology used by DOE was challenged in a "Report to the Service Station Dealers of America. . ," prepared by J.W. Wilson and Assoc., Inc, Sept. 1980.

Most divorcement legislation has thus far been aimed at the major vertically integrated refiners. Some legislation has "grandfathered" existing stations, while other legislation has excluded from its prohibition independent refiners which must purchase most of their crude oil supplies from other companies.42/

E. State Franchise Acts.

Since 1971 several states have passed laws regulating sales and advertising of franchises. Such laws take various forms but typically require some type of disclosure of the offering term, registration of the offering with a state agency and provide penalties for fraud and misrepresentation.43/ In addition some states have disclosure statutes which apply only to gasoline station leases or franchisee44/ The New York statute45/ is typical of such statutes and requires a prospective gasoline franchisee be furnished the following information; (1) gallonage history of the location; (2) names, addresses and reason for termination of prior dealers; (3) any commitments for sale, demolition or termination of the

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42/ See Fla. Stat. Ann. § 526.151(1) and (3), repealed by ch. 85-74, § 13 (1985).

43/ See 15 Business Organizations, Glickman, Franchising § 8.02 (1985).

44/ Alas. Stats. Supp. § 45.50.800; Cal. Corp. Code § 31005.5; Md. Code § 11-303; Mass. Gen. Laws, ch. 93E § 3; N.H. Stat. ch. 339-C.3; N.Y. Gen. Bus. Law, art. 11-B§ 199-b; R.I. Gen. Laws § 5-55-4(1); Tenn. Code §69-721; Vt. Stat., Tit. 9, ch. 109 § 4103; Va. Code §§ 59.1-21.15; W. Va. Code § 47-11C-4.

45/ N.Y. Gen. Bus. Law, art. 11-B § 199-b.

station; (4) training, goods and services to be provided by the dealer; (5) all dealer obligations including exclusive dealing requirements and required advertising and promotion; and (6) any restrictions on sale, transfer or termination. As discussed,[46/] the PMPA preempts any state law governing termination or nonrenewal of franchise relationships that is not "the same" as the provisions of PMPA. 15 U.S.C. § 2806. Thus, any state legislation contrary to the federal law is invalid under the supremary clause of the U.S. Const. art. VI, cl. 2. Twenty-six states[47/] had adopted dealer day in court law prior to the adoption of the Petroleum Marketing Practices Act in 1978 (PMPA).[48/]

The Minnesota franchise laws, Minn. Stat. ch. 80C, provide generally for regulation of franchises. Rules have been adopted by the Minnesota Department of Commerce pursuant to the franchise statutes which specifically prohibit certain unfair practices in motor vehicle fuel franchise agrements. Minn. Rules pts. 2860-5100-2860.5400. The question of the extent to which the Minnesota franchise statutes and rules are preempted has been the subject of recent litigation. In a recent unreported case, Judge Alsop held that "[t]he PMPA does not preempt state laws and

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46/ See discussion and cases cited infra at n. 27.

47/ R. Heinzelman, The Impact of Franchisee Protection Legislation on the Performance of a Marketing System: The Case of Gasoline Retailing, Appendix I, Phd Dissertation, Univ. of Md. 1982.

48/ For a discussion of pre-PMPA cases under state franchise acts see Annot. 67 A.L.R.3d 1299 (1975).

regulations, including the Minnesota Franchise Act and regulations promulgated thereunder, which address the offer, sale, and the assignability of a franchise." This result is consistent with decisions in other jurisdictions. See e.g. Exxon Corp v. Georgia Ass'n of Retailers, 484 F. Supp. 1008, 1016-1018 (N.D. Ga. 1979), aff'd sub nom Exxon Corp. v. Busbee, 644 F.2d 1030 (5th Cir. 1981), cert. denied 545 U.S. 932 (1981).49/

In addition, Minnesota, like Maryland and the District of Columbia,50/ has enacted legislation limiting conversions of stations to gas-only stations from full service stations. Minn. Stat. § 80C.146, in effect only from August 1, 1984 to July 1, 1986 provides that the franchisor may not alter a full-service station building to eliminate service bays unless the franchisee consents in writing. The provision does not apply to full service stations which are not operated by a franchisee. This provision may be enforced by a private right of action or by the Attorney General. Amoco Oil Company has argued this statute is preempted by the PMPA and also has challenged its constitutionality in pending Minnesota cases. To date the Court has not reached this issue.51/

49/ Findings of Fact, Conclusions of Law and Order for Judgment, at p. 13, Steven J. Fox v. Mobil Oil Corp., 3-83 Civ. 585, (D. Minn. June 24, 1985). While the findings and conclusions were subsequently amended, the amendments do not affect the conclusion with respect to preemption.

50/ Hearings on H.R. 5023, Subcomm. on Fossil and Synthetic Fuels of the Comm. on Energy and Commerce, House of Representatives, 98th Cong. 2nd Sess. at 236 (May 22 and June 21, 1984).

51/ Motion to Strike Count VI of Plaintiff's Complaint, Arthur P. Heutmaker, individually and d/b/a Arcade Standard Station, v.

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While the PMPA does preempt certain areas of state franchise laws, the PMPA specifically provides that state law governs as to assignments of a franchise upon the death, disability or retirement of the franchisee. 15 U.S.C. § 2802(c)(4). Absent state law to the contrary, courts have held under the PMPA that the death of a franchisee will allow the franchise to be cancelled. Minnesota is one of several states which have adopted legislation permitting the assignment of a franchise without permission of the franchisor to a family member upon death or incapacity of the franchisee. Minn. Stat. § 80C.145 (1984).

F. Underground Storage Tank Study.

There has been an increased awareness of the potential problems posed by leaking from underground gasoline storage tanks at retail gas stations. The last session of the Minnesota Legislature authorized a two year study "to determine the nature and extent of environmental problems related to underground storage tanks." Minn.

(Footnote Continued)

Amoco Oil Company, Civ. No. 4-85-1159 (D. Minn., October 17, 1984); Motion to Strike Count V of Plaintiff's Complaint, Norbert A. Meyer, individually and d/b/a Bim Meyer's Standard Station, Inc. v. Amoco Oil Company, Civ. No. 4-84-758 (D. Minn., October 11, 1984). The motions have been dismissed without prejudice and as not ripe. The consolidation of these cases is presently being considered by the Court. It is anticipated that summary judgment motions will be filed in the near future. It is possible that the questions of preemption and constitutionality will be raised at that time. Similar motins were made in two other cases. Reavely v. Amoco Oil Company, Civ. No. 4-84-958; Zahradka v. Amoco Oil Company; 3-84-1039.

Laws Ex. Sess. 1985, ch. 13, § 31, subd. 4(d). Any Legislation or regulations enacted as a result of the study may impose, directly or indirectly, additional costs on gasoline retailing.

APPENDIX B

WHAT WOULD HAPPEN IN MINNESOTA IN THE EVENT OF ANOTHER MAJOR OIL SHORTAGE?

Minnesota's economic vitality is highly dependent upon the availability and cost of energy, a good part of which currently must be supplied by petroleum products. Minnesota does not currently have indigenous oil resources and therefore must import to meet demand. In addition, oil is a world commodity with prices set in the international market. Disruptions in the international market, whether through cartel-induced reductions in output or through military or political actions, inevitably affect the price and availability of oil in Minnesota as evidenced by the supply disruptions in 1973-74 and 1979. Are similar disruptions likely to happen in the next five years? What practical policy options exist which might allow the state to successfully intervene in the market? This report will focus on the following questions with regard to disruptions in the supply of oil:

I. How likely are the chances of disruptions similar to those experienced in the 1970s?

II. What is the current federal policy regarding government responses?

III. What statutory options can Minnesota government exercise in response to the problems caused by shortages or substantial increases in price?

IV. Given current federal policy, how effective are responses by Minnesota government likely to be and what would be the likely impact of disruptions upon Minnesota's economy and the lives of its citizens?

A. *How likey is a major oil shortage in the next 5 years?*

The disruptions and supply shortfalls during the 1970s created substantial economic problems for the United States (and Minnesota) and changed U.S. thinking about the importance to the United States of energy and of a stable energy supply. At present, despite the conflict in the Persian Gulf, oil is plentiful. Most industry analysts expect a sizable surplus of available crude oil through 1990. Unless major new sources are discovered in the interim, or demand is reduced, the current excess in crude oil production capacity will diminish and OPEC nations will regain an increasing share of the world market in the 1990s. This condition increases the potential for supply disruptions likely to affect the price and availablity of petroleum products.

The Reagan administration contends that the United States is now better prepared, than in the 1970s, to meet an oil emergency. The administration cites numerous reasons the most important of which included the following:

a. The Organization of Petroleum Exporting Countries (OPEC) now produces only 33 percent of the free world's oil as opposed to 49 percent in the early 1970s. OPEC's ability to set market prices has been correspondingly reduced.

b. Natural differences in the interests of OPEC members has diminished OPEC's ability to control the actions of its members. Thus, OPEC's ability to keep prices artifically high has been correspondingly reduced along with its ability to artifically constrain production by its members.

c. The long-term effect of the artificially high prices caused by OPEC collusion has been a significant decline in demand, thus further dampening the ability of OPEC to set market prices.

d. The International Energy Agency (IEA) was established in 1974 to facilitate a coordinated response among the oil-consuming industrialized countires to oil supply disruptions and other energy problems. The IEA established an Emergency Sharing System to facilitate efforts of its 21 member nations to reduce the adverse consequences of a serious oil disruption and to promote balanced sharing of the shortfall among members. The IEA has encouraged the sharing of national oil stocks during crisis periods thus reducing the likelihood of panic-driven price increases.

e. The elimination of U.S. price controls has reduced demand to natural market levels. In 1984 U.S. demand for oil was about 15 million barrels daily versus well over 18 million in 1979.

f. The United States now has a Strategic Petroleum Reserve (SPR) filled with about 490 million barrels of oil or enough oil to supplant 75 percent of imported oil for about 200 days. The availability of SPR oil should lessen panic-driven demand in the United States and in other countries, thus constraining price increases.

g. United States oil stocks are higher now than in 1973 or than in 1979. U.S. stocks in 1985 have ranged from 1,459 to 1,514 million barrels as opposed to 1,278 in December, 1978.

h. Allies of the United States reportedly have enough government and private stocks to cover demand for three or four months.

In summary, Reagan administration officials seem to be making two points:

1. The system is much more resilient than was the case in 1973 or 1979.

2. OPEC, as a whole, is much less capable of orchestrating price increases and less inclined to implement a major boycott than was the case in the 1970s.

Critics of the Reagan Administration position point to the following to support their concern that the "true" picture is not as rosy:

a. Total U.S. stocks, including the SPR, are lower now than they were in late 1981. Although the SPR increased, the gain was more than counterbalanced by the decline in private stocks.

b. The stocks of allied countries have also declined since 1981.

c. Substantial excess storage capacity exists in Western countries. Thus, if buyers became nervous and wished to build inventories, as they did in 1979, they would have plenty of room to store their purchases.

d. The fact that the United States has reduced its dependency on OPEC imports is irrelevant. The price of oil is set by the international market. If other nations are short of oil the price for Americans will rise as well. In addition, many allies of the United States are dependent upon OPEC oil and their shortfall can not be offset by the United States.

e. The Reagan Administration has not developed a contingency plan, called for by the IEA, for a limited "fair sharing" of crude oil. The United States is the only member of the IEA which has not established programs for "fair sharing" of its national oil supplies during an oil emergency. In 1984 the Secretary of Energy informed the Congress that a fair sharing program was not needed.

In summary, U.S. oil stocks are higher at present than was generally the case in the 1970s. However, a major portion of the stocks are in the Strategic Petroleum Reserve and private stocks are generally lower than in the 1970s. The SPR may represent less of a buffer than claimed by the Reagan Administration, but the system as a whole may be more flexible and able to respond faster to changes in supply. More

importantly, petroleum analysts generally are not expressing fears of catistrophic shortages in the next five years.

B. What is the Current Federal Energy Policy?

The Reagan Administration's energy policy for supply emergencies is primary reliance on market mechanisms, accompanied with the use of the Strategic Petroleum Reserve (SPR), to determine the price and allocation of supply. This energy policy, according to DOE, is part of an overall economic policy that calls for less federal intervention.

The Reagan Administration believes past price and allocation controls failed to insulate the country from the effects of energy-emergency-induced price rises and supply shortages. Further, price and allocation controls actually exacerbated the problem by keeping prices below market clearing levels, thereby permitting continued high demand and eliminating the incentive to increase supply. Therefore, it is highly unlikely the Reagan Administration would institute similar controls after opposing them at both the federal and state levels. However, history would indicate that if the consumer impacts are severe enough, politicians will advocate government programs.

Rapid use of the Strategic Petroleum Reserve is a key component of current federal policy. The Reagan Administration has emphasized its policy of early and rapid draws on the SPR during major oil supply disruptions. This positon is best summarized in testimony given by the Secretary of Energy on February 21, 1984, before the Subcommittee on Fossil and Synthetic Fuels, House Committee on Energy and Commerce:

"...in a major disruption, the early sale of SPR oil in large volumes ordinarily *is the best policy for SPR use. This policy makes it possible to replace rapidly some oil lost because of a disruption and, therefore, to reduce price increases while worldwide supply and demand reach equilibrium. The marketplace needs to know in advance that this is our* general *policy so that unnecessary panic behavior can be avoided....The SPR...is an operational tool, and I have no hesitation in declaring our willingness and intention* ordinarily *to use it to optimum advantage early in a serious oil supply interruption. (emphasis added)*

In 1982, Congress approved a bill to give the President short-term, totally discretionary powers to allocate oil supplies in a severe shortage. The vote in favor was bipartizan and overwhelming yet President Reagan vetoed the "Standby Petroleum Allocation Act", mainly because of his policy commitments against allocation controls, even though he would retain sole power to use or not use them.

When asked to report to Congress on how it would handle a severe disruption, the Administration explained:

"The energy emergency response policy of the Federal Government is to rely on the market...This policy is based on the principle that markets, which are most efficient and effective in allocating resources during "normal" times, will also serve as the best allocator during supply disruptions, even severe disruptions."[1]

The Administration has won a change in the International Energy Agency's plan for sharing oil during a crisis. In a crisis, the U.S. will "share" its oil with needy allies such as Italy or Turkey, but only at the high, crisis, "free market" price. Our allies might not view oil provided at a world market price of perhaps $60 per barrel as especially helpful. The price on the spot market will be the same as the "free market"

price, thus "free marketizing" the IEA may limit its utility. The original purpose of the IEA was to share oil among member nations precisely so that they would not have to run to the spot market and bid up prices because ultimately all nations end up paying the high spot price.

The IEA recently completed (November 1985) its fifth paper test of its emergency oil allocation system. The Allocation Systems Test 5 was the first test in which the U.S. used the Strategic Petroleum Reserve to cushion the crisis, and used it at its present maximum drawdown capacity of 2.3 million barrels per day. The first cycle of the two-month test assumed a major supply disruption from the Middle East and an overall loss of 6 million barrels per day from 14 countries or an overall supply disruption of about 15 percent. The second cycle of the test assumed a complete loss of North Slope Alaskan oil for an additional shortfall of 1.6 to 1.7 million barrels per day in the U.S. which thus allowed the U.S. to pull oil from the world market under the IEA's allocation system. George Bradley, acting assistant secretary of energy for international affairs and energy emergencies with the Department of Energy said that under the two-part scenario the IEA used to test its sharing system, all countries "followed suit" in the test and drew down their government stocks. Eighteen U.S. companies and two foreign-based companies with U.S. subsidiaries competed for access to the assumed drawdown of SPR crude. [2]

C. What options are currently available?

The Minnesota Legislature has instituted two measures with respect to state action regarding shortages of petroleum products. The Department of Energy and Economic Development is charged with maintaining an emergency conservation and allocation plan and maintaining a state set-aside program. Both measures have been implemented through formal rules and are in place should an emergency occur. Both sets of rules were developed to respond to shortages created by price and allocation controls in effect during the 1970s. The rules would be of limited usefullness unless the federal government reinstituted temporary price controls in response to a supply disruption.

i. The formal rules governing Petroleum Supplies.

The Department of Energy and Economic Development (DEED) is charged with monitoring the supply of petroleum products. When the department's analysis indicates a supply shortage within the next three months is likely, the commissioner of DEED may recommend that an energy supply emergency be declared by the executive council or legislature. The emergency status and powers expire in 30 days unless renewed by the legislature. Emergencies may be declared for all or parts of the state.

Following declaration of an "energy emergency" DEED is charged with analyzing the energy supply situation and evaluating alternative courses of action included in the emergency plan. The department must select and recommend to the governor the least restrictive measures capable of eliminating the fuel shortage.

The Department of Public Safety's emergency services division implements the energy emergency plan and coordinates the emergency operations of government agencies. The department would use the regional and local fuel oil coordinators to facilitate emergency operations throughout the state. Each county, and city of the first class, is to create a local energy conservation board to hear requests for exemptions to the measures instituted by the emergency plan being implemented. Due process regulations are in place within the rules. Statuatory and civil penalties exist to back up the implementation of the plan.

The plan establishes priority uses of fuel oil and of motor fuel. The governor is responsible for selecting the measures to be implemented and has a range of options. The governor can call for voluntary measures such as lowering thermostat settings or mandatory measures such as ordering fuel oil suppliers to suspend deliveries to large users who have more than one week's supply on hand. The list of options available to the governor is extensive and beyond the scope of this study.

In an energy supply emergency, the governor has authority to take action in response to a shortage of supply. However, the governor's powers are restricted to measures which might reduce demand. For example, to control panic buying the governor might impose a five gallon minimum purchase rule. Strategies to reduce demand could include imposing four day weeks at state facilities, lowering temperatures in public buidlings and calling for increased ride-sharing programs by the private sector.

However, the governor has no powers to reduce or control prices. Reducing consumption in Minnesota may avoid increased expenditures by Minnesotans on fuel, but is unlikely to result in reduced prices because price is determined by the national and international market.

ii. Governor's Set-Aside Authority.

Legislation has established set-aside powers which can be used during a declared energy emergency. Set-aside powers require prime suppliers of motor gasoline and middle distillate to make, on a monthly basis, 3 percent of their gasoline and 4 percent of their fuel oil available for allocation by the commissioner of DEED. These powers are granted for the purpose of minimizing the adverse impacts of shortages and dislocations upon the citizens and the economy of the state.

Rules are in place should the governor choose to implement state set-aside authority. However, it should be noted that the state set-aside rules were developed in response to federal price and allocation controls. Those controls expired in 1981 and President Reagan vetoed legislation giving the President emergency powers to reimplement them. President Reagan's veto of this legislation, which would have increased his powers and freedom of action, could be interpreted as an indication of the strength of his opposition to price and allocation controls.

If price and allocation controls were to be reinstated, then the state has a system in place ready to be quickly implemented. It is possible that the set-aside rules could prove helpful during a period of tight supplies if prices do not

reduce demand fast enough and result in short-term supply disruptions as the market adjusts. In this instance set-aside authority could be exercised, but the petroleum products "set aside" would be made available at market prices. In theory, sufficient product should always be available at the current market price, although that price may have increased considerably, and thus set-aside authority should not be needed.

D. How would a major shortage impact Minnesota?

If the Reagan Administration responds to a major shortage in petroleum products with the market mechanism policy as promised, then Minnesota government will have very few practical measures with which to respond.

The Reagan Administration contends that the shortages and difficulties experienced in the 1970s were caused to some extent by the implementation of price and allocation controls.

> *"In the past, price and allocation controls have been tried as a way to insulate the entire population from the effects of energy-emergency-induced price rises and supply shortages. But, the nation has learned from its experiences during prior oil supply disruptions that price controls merely delayed consumer price increases; they were not avoided. Moreover, price controls exacerbated shortages by keeping prices below market clearing levels, thereby permitting continued high demand and eliminating the incentive to increase supply. Allocation controls then were imposed to spread these government-sanctioned shortages among the various regions of the country and sectors of the economy. As a consequence, the petroleum distribution system was distorted, with the result that there were supply availability problems in regions of greatest demand, primarily the larger urban areas. Allocation controls, based on outdated historical use paterns, were inefficient and acutally increased the costs of disruptions."* [3]

In theory, should a severe shortage occur, perhaps through the closing of the Strait of Hormuz, the market will respond to the decrease in supply by increasing price. The administration postulates that demand is relatively elastic, and thus consumers will choose to purchase less petroleum as price increases and, therefore, there will be no shortages. The Reagan Administration believes petroleum suppliers are no longer operating on longterm contracts and will react quickly to changes in supply by quickly setting new prices and accepting new customers who can meet the new prices. There is no way of knowing for certain that this will actually happen. However, the marketplace has been able to allocate other commodities during periods of supply disruptions and price has been the determining factor.

Currently, surplus production capacity exists within the oil-producing countries. An increase in prices caused by a regional supply disruption is likely to trigger immediate increases in production by other oil-producing areas such as Latin America. The oil-producing countries not effected by the disruption would have an opportunity to gain greater market share without causing lower prices.

Minnesota's existing emergency powers are not likely to be very useful in the absence of a shortage caused by price controls. In the absence of federal price controls, the price of petroleum will be set by the international market. Minnesota has little power to influence the market, but rather can limit itself only to attempting to contain costs through conservation

measures such as mandating ridesharing. The governor has sufficient powers to implement conservation measures should an "energy emergency" be declared. However, it is not certain that rising prices, in and of themselves, will result in the need to declare an energy emergency because the legislation focuses on inadequate supplies rather than high prices.

Given the Reagan Administration's long held policies, the most likely effect for Minnesotans of a severe shortage of petroleum products will be significant price increases.

> *"A sudden interruption in world crude oil supplies, if so severe that the gross supply could not be offset by excess available production capacity and/or the drawdawn of then-existing petroleum stocks, would cause a rise in the world oil price."* [4]

The extent of the price increase will be a function of the size and duration of the shortage coupled with the amount of panic buying and speculation. There can be no doubt that Minnesota's economy would be hurt by substantial increases in the cost of petroleum products.

i. Potential Impacts on households.

The United States Department of Energy, according to former secretary Donald Hodel, examined selected, hypothetical disruption scenarios in which crude oil price increases ranged from 24 to 100 percent. The impacts were then averaged over a 12 month period with the principal findings being summarized as follows: [5]

- The increases in energy expenses in the selected scenarios for the average family is estimated to be $114 to $458 per annum, or 0.7 to 2.6 percent of its annual household disposable income.

- For low-income families, the increase in energy costs in the selected scenarios is lower in absolute terms but higher as a percentage of total annual disposable income. For example, for those with incomes below 125 percent of the poverty level, the estimated increase averaged $65 to $256, or 1.3 to 4.9 percent of annual disposable income.

- Most of the increase in energy expenses would be for motor fuels (gasoline and diesel fuel) which was estimated to account for about 90 percent of the increase for the average of all households and about 80 to 85 percent for the average household below 125 percent of the poverty line.

- Nationally, only about 15 percent of households use heating oil. For these households, increased expenditure for fuel oil in the selected scenarios is estimated to average $36 to $165, or 0.2 to 0.7 percent of annual disposable income; for the average household below 125 percent of the poverty line, the increased cost of fuel oil was estimated at $32 to $157, or 0.4 to 2.2 percent of annual disposable income.

If crude oil prices increased more than 100 percent the impacts would be proportionately higher. The most serious impacts, of course, would be to low income households who do not have the financial resources to handle such unexpected increases in the cost of living.

ii. Impact on Service Stations.

In the supply disruptions of the 70's some brand name stations experienced severe shortages in supply and consequent economic losses. Allocation controls limited the amount of gasoline available to oil companies these stations represented. As a result the oil companies had to ration their allotted gasoline among all of their service stations. Many of the stations were left with inadequate supplies and consequently ran out of product. With price controls in effect, the stations

found themselves selling less product while receiving the same price per gallon and thus suffered a net loss of income. The economic consequences for some owners were disasterous.

In theory, station owners should not be faced with similar shortages as long as price and allocation controls are not implemented by the government. Service station dealers restricted to purchasing from a single supplier should be able to purchase supplies of gasoline as needed, but may have to pay much higher prices to obtain this fuel. Wholesale prices of all suppliers should rise, so dealers generally should be equally affected and able to pass prices on to the customer. Maintaining profitability during major price swings would be challenging, but major swings in price appear to present an opportunity for gain as well as for loss depending on the nature of the swing and the ability of dealers to anticipate changes in supply and demand.

Retail dealers will, however, face two potential problems. First, they are likely to bear the brunt of customer disatisfaction over the increased cost of fuel. Second, in theory, demand should decline with higher prices, hence, it is possible that net income may decline and station owners could suffer depending upon the degree to which they are saddled with high fixed costs such as lease payments and insurance.

E. Summary.

Currently, available crude oil supplies are adequate to meet demand, but national inventories are being held to minimal levels to reduce costs. Some analysts are concerned that inventories may not be sufficient to meet even minor changes in demand caused by severe weather, much less a major disruption in crude oil supplies. However, petroleum analysts are generally not indicating much concern about the probability of serious disruptions in supply within the immediate future.

If the Reagan Administration maintains its current market-oriented policy in the face of some future substantial decline in the available supply of crude oil, there is little Minnesota government can do to dampen the almost certain increases in price. State policy-makers will be restricted to conservation measures as a means of minimizing the economic costs to the state. States, such as Minnesota, without petroleum resources would likely suffer considerable economic losses should a major shortage occur.

Should the Reagan Administration, in the course of a supply disruption, bow to popular pressure generated by exploding energy prices and implement price and allocation controls, then Minnesota has the means in place to respond rather quickly. The Department of Energy and Economic Development has established rules governing petroleum supply emergencies. The rules cover set-aside allocations as well as voluntary and manditory measures to reduce consumption of petroleum products. The

current state rules are designed to deal with shortages created by price controls. These rules could prove useful in the early phases of a free market adjustment to a disruption if the higher prices do not cut back demand fast enough. The rules could provide an in-place response to the shortage that could result if price controls are implemented again as a federal response to supply disruptions.

FOOTNOTES:

1) Statement by Donald Paul Hodel, U.S. Secretary of Energy. Statement reported in a memorandum to Representative Phil Sharp, Chairman of the Subcommittee on Fossil and Synthetic Fuels, Committee on Energy and Commerce, United States House of Representatives. The memorandum was prepared by the Subcommittee's staff and presented to Subcommittee members on June 4, 1984. The quotation is consistant with published U.S. Department of Energy public statements.

2) As reported in the Oil Daily, Washington D.C., on Monday, November 18, 1985, on page A-3.

3) Statement of Donald Paul Hodel, U.S. Secretary of Energy before the Subcommittee on Environment, Energy and Natural Resources of the Committee on Government Operations, U.S. House of Representatives, September 13, 1984. Statement reported in a United States Government Memorandum issued by the Department of Energy on September 26, 1984.

4) Ibid.

5) Ibid.

APPENDIX C

CRITIQUE OF INFORMATION SOURCES

There are three major public sources of data on the petroleum industry and one private source. The public sources are the U.S. Department of Energy, primarily the Energy Information Agency, the Department of Commerce (Business Census and County Business Patterns) and the Bureau of Labor Statistics. The private source is the Lundberg data, published as the Lundberg Letter and the Lundberg Survey. Most analyses of the petroleum industry rely on these data sources either directly or indirectly.

In all cases we found it essential to distinguish between the nominal facts presented and the appropriate applications of the underlying data. Each of the sources has significant limitations that must be understood. Initially, we were surprised that despite the abundance of information in circulation about the petroleum industry, there is not information available that can be used to directly analyze the competitive behavior of the industry. Later it became clear that the cost of collecting the required data would be prohibitive. The result is that the industry can only be analyzed indirectly; making an understanding of the available indirect measures all the more important.

This appendix will discuss each of the data sources separately. First the public sources will be presented, followed by the private source.

I. The Department of Energy Data.

The Department of Energy (DOE) collects data on a variety of attributes for the various levels of the petroleum industry. In this study we focused on information related to the wholesale and retail levels. This section will discuss DOE marketshare data and wholesale pricing data.

A. *Refiner/Supplier Marketshare Data*

There are two important attributes of marketshare data; the market described and the accuracy of the data about that market. The DOE data has significant problems on both accounts.

The DOE refiner/supplier marketshare data is collected and reported for each state. This presents some significant problems for analysis of market behavior because the political boundaries of a state may bear little resemblance to the economic markets involved. For example, at the national level this presents interstate problems in the New York, New Jersey market and intrastate problems between San Francisco and Los Angeles. In Minnesota this presents a problem for the Duluth-Superior and the Fargo-Moorhead markets. The nature of the industry is such that it would be very difficult to collect data for each economic market. The point is that the existing DOE marketshare data has significant limitations because it is limited to reporting on a state level.

The other major limitation of the DOE marketshare data is the dubious ability of the data to portray the phenomenon it purports to describe. In discussions with DOE officials we learned that they are aware of errors in the reported percentage of up to forty percent in either direction for at least some

states. The Minnesota Department of Energy and Economic Development (DEED) recalculated the DOE Four-Firm concentration data and the Herfindahl indexes based upon knowledge they have about the reporting practices of firms in Minnesota. DOE data reports the Minnesota's Four-Firm concentration increased during the period 1978 to 1985 from 58 percent to 67 percent. For the same period DEED calculates the concentration to have increased from a starting level of 47.5 percent to 58 percent. This represents an over-reporting error of 15 to 20 percent.

This type of error creates two problems, problems of absolute level of concentration for a given state and problems of relative concentration between the states. A state agency may be able to use the DOE data to calculate its own absolute level of concentration. In fact, this was one rationale DOE advanced for continuing to collect this data despite its known flaws; state energy agencies like to use the data to study their own markets. It is our conclusion that this data should not be used to compare states relative to one another for the following reasons:

1. - Using Minnesota as the example again, based upon the DOE data Minnesota is one of the most concentrated markets in the nation. Using the figures from DEED, Minnesota becomes a middle of the road state. The problem is that the data for other states may have errors even larger than Minnesota's. The magnitude of these errors must in turn be doubled because they can be in either direction, either over-reporting or under-reporting. Thus, we concluded that since the error rates can be up 80% for any two states that it is improper to use this data to compare states directly.

2. - We did however, conclude that this data could be used to gain some understanding of market behavior. It seems reasonable to conclude that

> while the absolute levels and therefore the relative levels contain unacceptable levels of error, the trends for any given state are likely to be fairly accurate. This is based upon the fact that the data collection technique has remained fairly stable for the past ten years. The EIA-25 reporting system used until 1982 is not substantively different than the EIA-782C currently in use. However, it should be noted that the sampling frame changed significantly during that time. It reportedly decreased from 270 refiners to slightly less than 200 currently. The increased importance of the spot market has also contributed to the problems with this data collection system.

In this report, data for the period since decontrol is displayed based upon trends not absolute levels. (See for example pages 76 and 77.) These calculations were done in a rather simplistic manner, simply subtracting the level in existence at the end of price and allocation controls from the current level. A more rigorous analysis of state level trends might provide greater insight into the effects of decontrol on marketshare.

Lastly, notice that all DOE marketshare data is subject to this same problem. Thus, nothing is gained by looking at the Herfindahl indexes or the Eight-Firm concentrations as opposed to the Four-Firm concentration figures.

In summary, we feel that the most appropriate application for this marketshare data is to compare the trends between states. This data is <u>not</u> appropriate for determining absolute levels of concentration and therefore is <u>not</u> appropriate for comparing the concentration levels between states.

Subsequently, DOE informed us that they are currently conducting an analysis of the EIA-782C data collection system to

determine more precisely the nature and extent of reporting errors and to determine how the system could be improved. This investigation was scheduled to be completed in April 1986. It was not known if the results of the study would be made public.

B. *Wholesale Pricing Data.*

We found that the DOE wholesale pricing data was appropriate for determining approximate price levels but not for understanding pricing behavior. This distinction is important for those policy-makers and interest groups desiring to supplement the marketshare trends data (which describes what is happening) with insight into the market behavior (which describes how it is happening.) It is impossible to use available DOE price data to determine if firms are competing or cooperating.

This data is currently generated from two reporting systems, the EIA-872A and the EIA-782B. (No discussion of the pre-decontrol reporting system will be included in this section.) The DOE reports published in the Petroleum Marketing Monthly (PMM) which are generated from this information are statistically quite precise, but the prices reported have very limited practical applications because of their qualitative characteristics. First the general qualitative limitations will be discussed, then the limitations inherent to each reporting form.

PMM reports two basic wholesale prices; sales to company-ops and sales for resale. It reports these two prices for each of two categories, major refiners and all others. Each

reported wholesale price is calculated by the totaling the volume of gasoline sold in a state to each type of buyer then dividing the total by the total amount of revenue, (i.e. total gallons divided by total dollars equals average price per gallon for each buyer/seller permutation.)

To gain insight directly into the pricing behavior in a given market, several important things not contained in the DOE data would be needed. First, and perhaps foremost, the market in question would have to be properly defined. Generally, an acceptable real world level of definition would be differentiation for each urban market and each rural market. Given the levels of magnitude involved, it would even be acceptable to limit the focus to those major urban markets needed to capture an acceptable percentage of total volume. The current DOE state level breakdown is very limiting in this regard.

A second essential type of information needed is data about the price of product to independent marketers versus the internal price within the major vertically integrated companies. Categorically, this minimally would mean a breakdown of price into branded and unbranded. It should also include further breakdowns into direct distribution system prices and indirect distribution system prices.

The time period is the final essential pricing information. It is not only necessary to know who received what price, but it is also essential to know when it was offered. It is only by that method that price leadership in particular

markets can be observed. Information about who and when are needed to answer these important questions. Does the same firm or firms consistently move a market or markets? Based on this, is it reasonable to conclude the firms are cooperating rather than competing?

The current system breaks down data only by company-ops versus sales for resale. Note that lessee-dealers, even if directly supplied by a refiner, are not considered company-ops. Thus, the price reported as major refiners sales for resale is the average of the price charged to their dealers and the price charged to the independents who compete with their dealers; not a very revealing statistic. In our study we found that the wholesale price was basically the same throughout our entire region. (See page 59.) This could reflect either efficient competition or effective cooperation.

Because the current data is widely circulated, a brief discussion of the wholesale price data collection system is warranted. This discussion will be followed by an illustration of the importance of understanding the fine points to properly use the data.

The DOE wholesale price data is based upon the EIA-782A and the EIA-782B reporting forms. The 782A samples the entire universe of refiners. The 782B samples a population selected from the universe of indirect distributors, (i.e. jobbers).

The 782A data captures the wholesale price charged to company-operated retail outlets and the price charged all others, aggregated as sales for resale. Thus, the 782A sales

for resale price is an average of the wholesale price charged to the indirect distribution system and the price charged to lessee dealers directly supplied by the refiners.

The 782B captures the price charged by the indirect distributors, who may or may not be branded. It captures the prices given to jobber company-ops. The 782B sales for resale price is an average of the price to branded lessee-dealers and the price to the independent dealers.

The problems created by these aggregations are clearly illustrated in the following example. This is how the DEED calculated the average wholesale price for the various states in our region.

C. *Adjustments to DOE Wholesale Price Data - Figure R-3.*

The state level wholesale price information shown in Figure R-3, page 59 is taken from 1983 and 1984 issues of the "Petroleum Marketing Monthly" published by the U.S. Department of Energy. The table summarizes monthly average wholesale prices for leaded regular and unleaded regular gasoline during 1983 and 1984. To facilitate comparison among states, prices for the two grades of gasoline are averaged together without any weighting for volume.

The DOE data has also been adjusted to correct for slight differences in the combination of wholesale prices reported in each state. The "Petroleum Marketing Monthly" reports the average price of 'sales for resale' by refiners. These prices include sales to both jobbers at terminal prices and retail outlets at higher dealer tank wagon (dtw) prices. Since the

portion of total resale volume going to retail outlets varies from state to state, average resale prices vary accordingly and can interfere with the ability to compare prices in different states.

The method used to correct for these price differences is summarized in the table on page C10. Column 2 of the table lists the share of refiners' sales for resale going to retail outlets in 1982. According to the Lundberg Letter, DTW prices are generally 3.5 to 5 cents per gallon above terminal prices (Lundberg Letter, December 6, 1985). Therefore, a conservative 3.5 cent margin multiplied by the retail outlet share of resale volume in each state equals an estimate of how much DTW sales increase DOE's prices over average terminal prices. Subtracting this price difference in Column 3 from the DOE wholesale price provides the estimated average terminal price in column 4.

The price adjustment lowers the wholesale price for each state by an average of 0.8 cents per gallon. The reduction varies from 0.5 cents to 1.4 cents for the nine states included in Figure R-3 and the amount of variation among states is generally limited to one half cent per gallon.

ADJUSTMENT OF DOE WHOLESALE PRICES TO EXCLUDE DTW PRICES

(cents per gallon)

	(1) DOE WHOLESALE PRICE	(2) REFINER DTW SHARE	(3) PRICE ADJUSTMENT	(4) TERMINAL PRICE	(5) DIFFERENCE FROM KANSAS PRICE
MINN.	86.7	20.1%	0.7	86.0	3.3
N.DAK	87.3	38.8	1.4	85.9	3.2
S.DAK	86.9	32.0	1.1	85.8	3.1
IOWA	86.0	21.6	0.8	85.2	2.5
WIS	86.2	17.8	0.6	85.6	2.9
ILL	85.9	31.3	1.1	84.8	2.1
NEB	85.5	21.5	0.7	84.8	2.1
MO	85.0	16.5	0.6	84.4	1.7
KAN	83.2	15.1	0.5	82.7	-
MIDWEST	85.6	26.9%	0.9	84.7	
U.S.	84.5	26.9%	0.9	83.6	

SOURCE: U.S. Dept. of Energy, "Petroleum Marketing Monthly," 1983 and 1984 issues. Data on DTW share of sales volume is taken from U.S. Dept. of Energy, Office of Competition, Deregulated Gasoline Marketing (Draft Report), March 1984, pp. 82, 84-86.

II. The Business Census and County Business Patterns Data.

These two sources are quite similar and are widely used to analyze the population trends. The Business Census is compiled every five years using direct surveying techniques. County Business Patterns is compiled annually using secondary administrative data sources such as tax data. Their greatest limitation for use in analysis of the petroleum industry results from the definitions employed for each type of business.

Both of these sources define a business based upon its primary source of income. Particularly in recent years, this has resulted in the omission of significant numbers of gasoline sellers and auto repairers from this reporting system because these products and services are offered as part of extended product lines. For example, convenience stores selling gas are not counted as service stations and tire stores that perform general repairs may not be counted as general repair shops.

As a result of these problems with definitions, we concluded that this information was not appropriate for determining absolute population levels of service stations, general repair shops or specialty repair shops. However, this information is useful for observing the direction and magnitude of trends.

There is one additional problem. The 1982 census contains a one time only error. Due to an error by the IRS, businesses without payroll were not included. This has a significant but unknown impact in the petroleum industry. The "mom and pop" stores and the single proprietor garages are not reflected in the statistics. This adds to the problem of trend analysis.

III. Bureau of Labor Statistics Data.

The Bureau of Labor Statistics (BLS) conducts extensive survey's to obtain price data for the Producer Price Index (PPI) and the Consumer Price Index (CPI). Due to limitations on the scope of this study we did not use this data source, nor did we analyze it, to any significant degree. None the less, there are some important points to mention.

In general, the pricing system in the petroleum industry is so complex that no simple approach will accurately capture pricing behavior. For the PPI, the BLS collects data on a wholesale price, not the wholesale price. This apparently is satisfactory for their purposes. However, it is easily and commonly misused for other purposes.

It appears that the BLS selects one simple refiner price, e.g. posted rack price, and one simple wholesale price, e.g. distributor's DTW price. Thus, they obtain a nominal refiner price and a nominal wholesale price. It is our understanding that there is no price weighting to account for different volumes sold at different prices to different categories of buyers, i.e. lessee-dealers in the direct distribution system versus independent jobbers in the indirect distribution system. Thus, apparently no attempt is made to generate a statistic that captures the prices actually paid by consumers.

The BLS also collects retail prices for the CPI. Their objective apparently is to quantify macroeconomic changes, not intimately profile the petroleum industry. For example, it is our understanding that the BLS retail price data does not differentiate self-service price from full-service. Within

the petroleum industry, this is very important when comparing various areas of the country because self-serv and full-serv are effectively two different products whose proportional consumption and price difference varies quite considerably around the country. Unless they are explicitly weighted for each separate market, the statistic generated has very few appropriate applications.

It is our conclusion that it should be assumed that arguments about the petroleum industry which are predicated upon manipulations of BLS data are unsupported until proven otherwise. This is especially true for retail price data.

IV. The Lundberg Letter and the Lundberg Survey.

The Lundberg Letter and the Lundberg Survey are similar data sources published by essentially the same private sector company. They are widely cited in the media and in studies of the industry. They provide both price and marketshare information at the retail level. They provide this data for major metropolitan markets. For this reason it is important to consider their strengths and weaknesses.

In our estimation this is probably the best price data available. It defines markets based on the reasonable economic markets. It provides data by grade of gasoline, type of service, and style of stations. It provides data about brand of gasoline. Unfortunately, it does not provide information about direct network distribution versus indirect, e.g. refiner's company-op versus jobber's lessee dealer. The price data is collected by independent contractors who drive into a station and record posted prices.

The greatest limiting factor is the unknown statistical reliability of this data. They explained that it would be prohibitively costly to conduct a complete census survey of a market and survey a sample simultaneously. Thus, it is statistically shaky to compare differences between cities. For example, it is not possible to state with a known degree of confidence that a two cent nominal price difference between two cities represents a real difference. We encountered discussions of price differences to the tenth of a cent based upon Lundberg data. This data is just not that precise. Our best guess is that it gets within a cent or two for any given grade of fuel by type of service.

The other type of data reported is retail marketshare by brand. This data is less useful for two reasons. First, it does not break down the data into direct and indirect distribution systems. The data is reported by brand. Second, the data collection method is less reliable. It is based upon voluntary cooperation on the part of the station owner. In our estimation, station owners have a significant vested interest in reporting volume data inaccurately.

V. Conclusion

It is our conclusion that there are no data sources available that allow an observer to directly assess the pricing behavior of the firms in the industry and at either the refining, wholesale or retail level. It is not likely that such data will be collected in the foreseeable future due to the prohibitive cost of doing so.

The best information available for assessing changes in market competitiveness, DOE measures of refiner/supplier marketshare concentration, has significant limitations. These measures are currently under investigation. Hopefully, some of the data collection problems will be eliminated in the near future.

The most frequent problem we encountered in this study was statements purported to be factual, which upon examination proved to be supported only by illusionary facts derived from improper interpretations or applications of existing data sources. It behooves the consumer of any petroleum industry debate to discriminate carefully between the information, the misinformation and the disinformation.

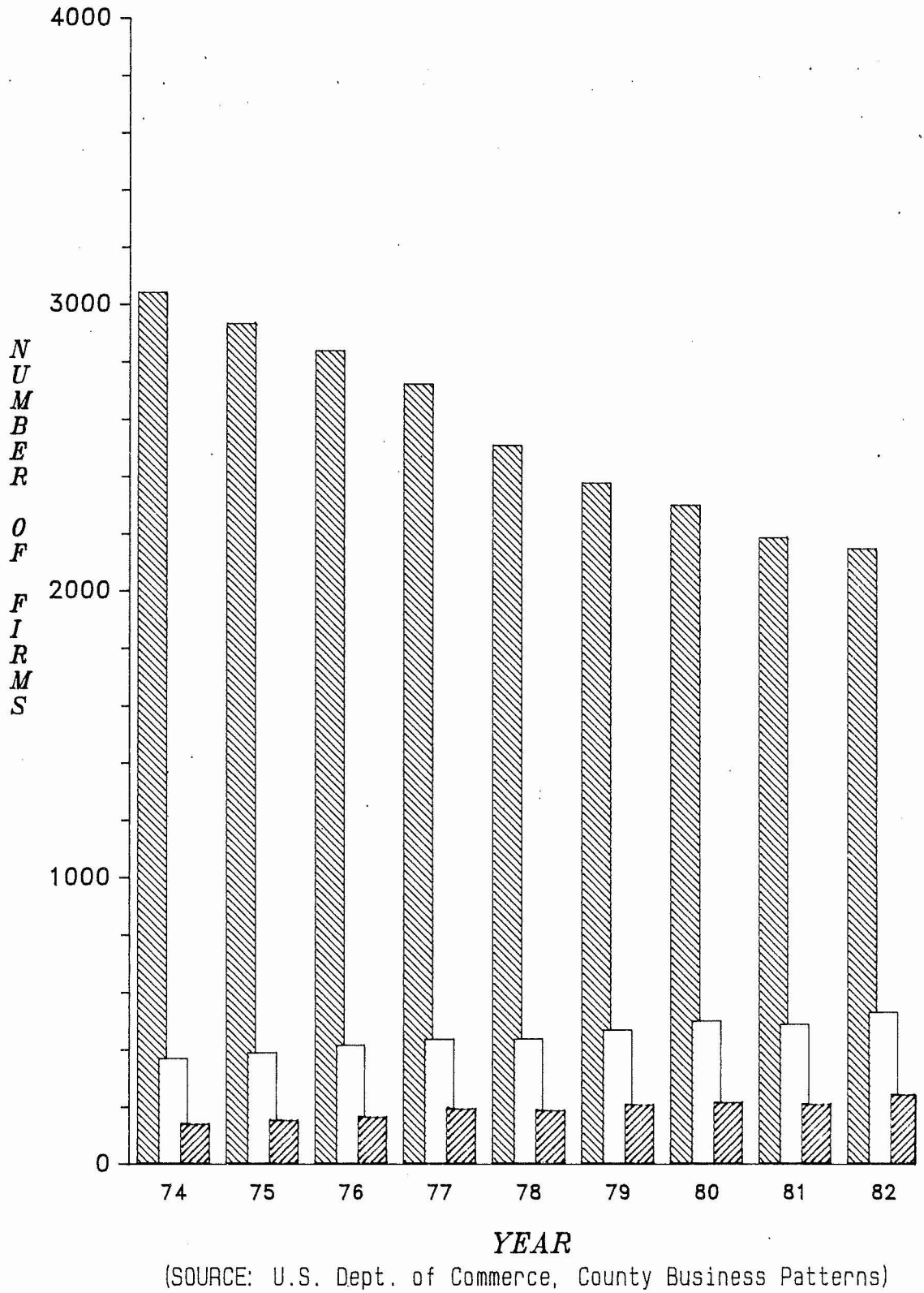
APPENDIX D

BUSINESS STYLE TRENDS

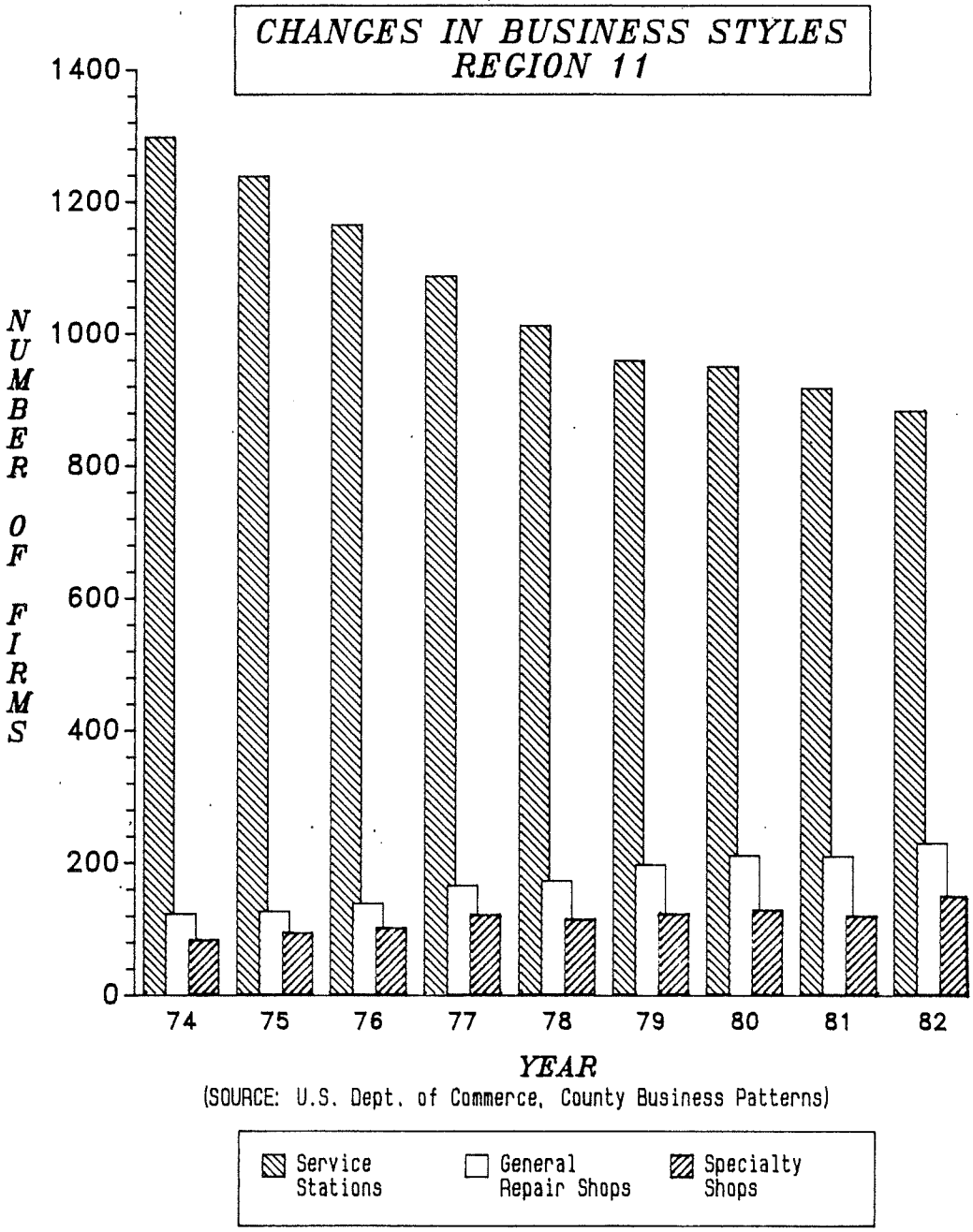
By Minnesota

Regional Development Commissions

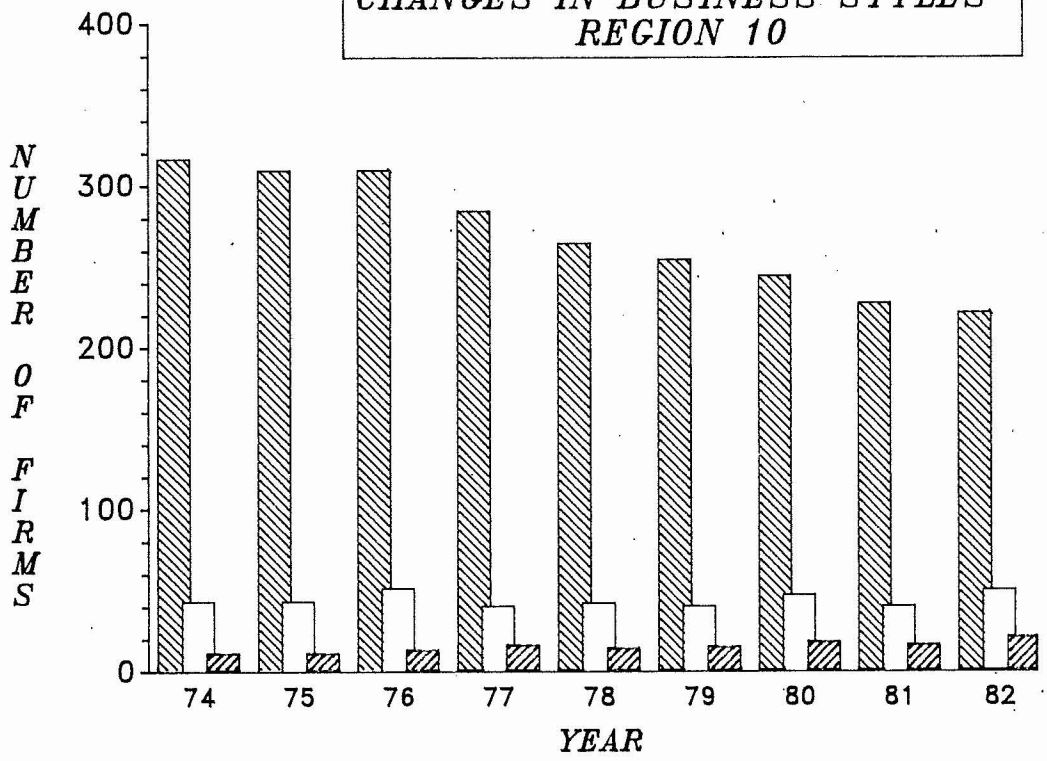
CHANGES IN BUSINESS STYLES STATEWIDE MINNESOTA



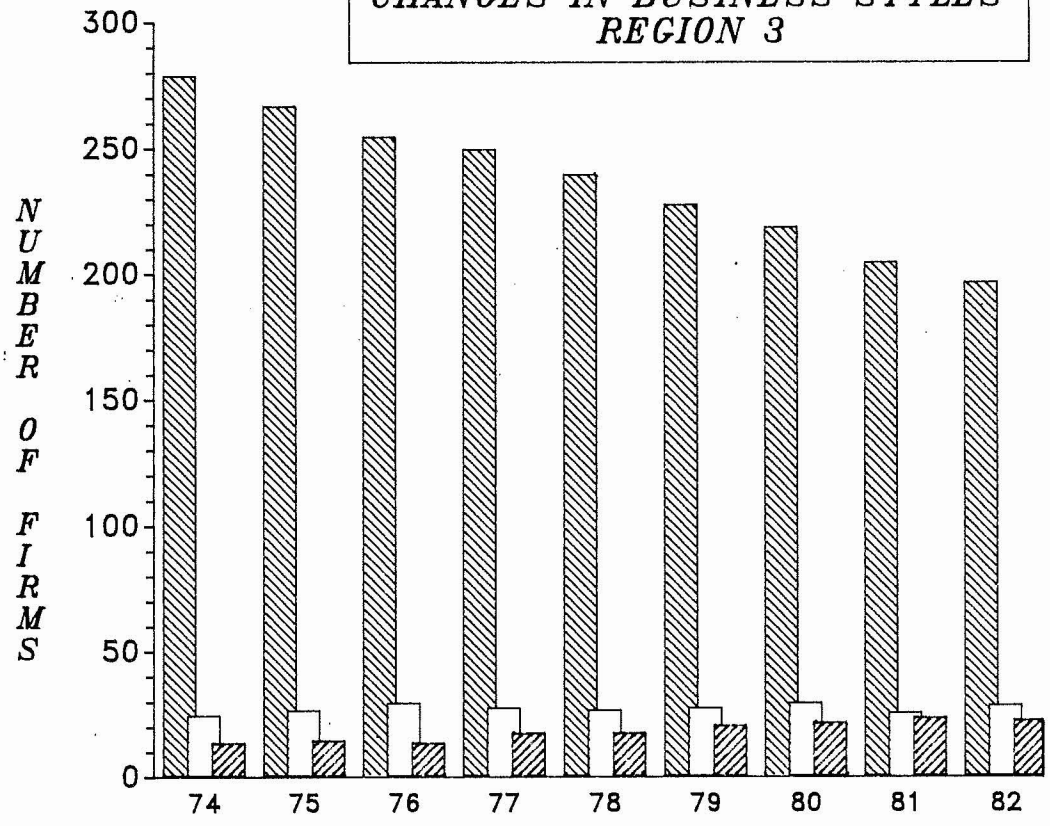
(SOURCE: U.S. Dept. of Commerce, County Business Patterns)


CHANGES IN BUSINESS STYLES
REGION 11
NUMBER OF FIRMS
1400
1200
1000
800
600
400
200
0
74
75
76
77
78
79
80
81
82
YEAR
(SOURCE: U.S. Dept. of Commerce, County Business Patterns)
Service Stations
General Repair Shops
Specialty Shops

CHANGES IN BUSINESS STYLES REGION 10

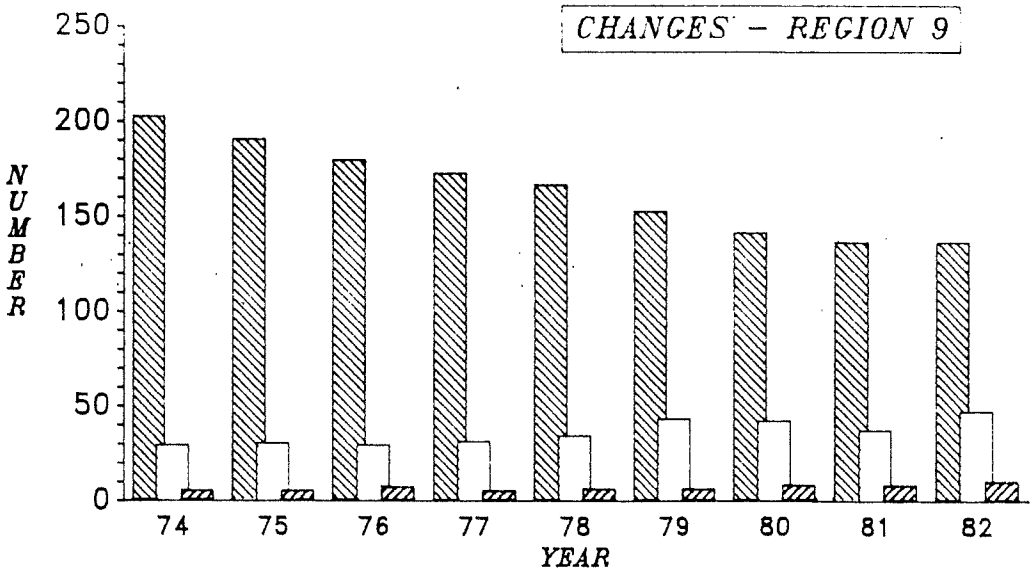


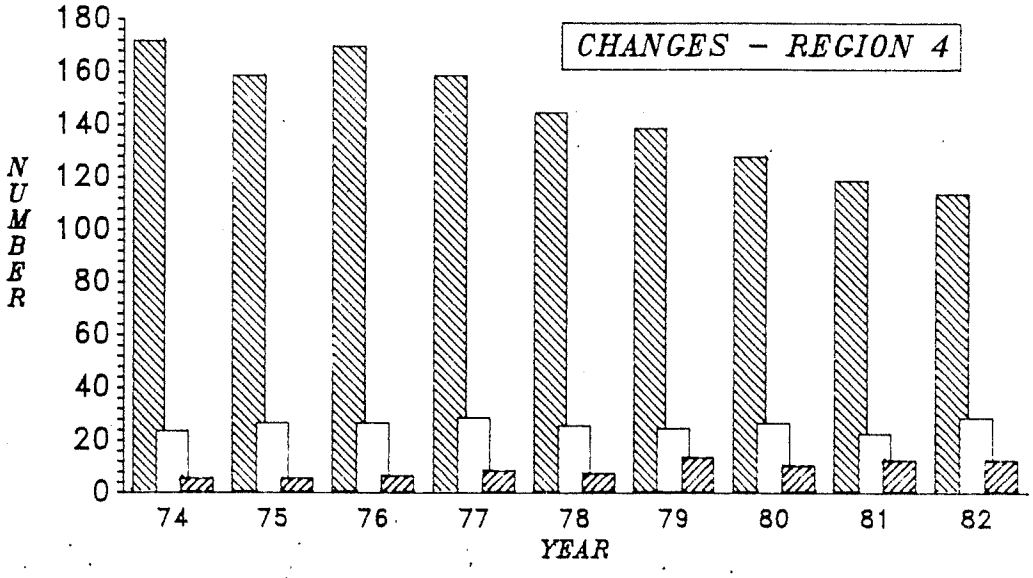
CHANGES IN BUSINESS STYLES REGION 3

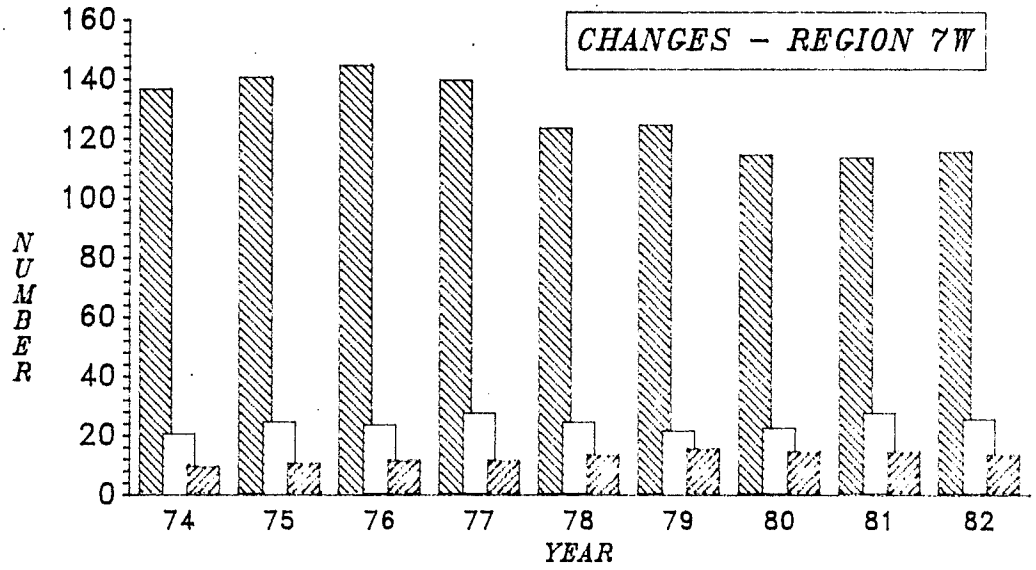


(SOURCE: U.S. Dept. of Commerce, County Business Patterns)

Service Stations | General Repair Shops | Specialty Shops

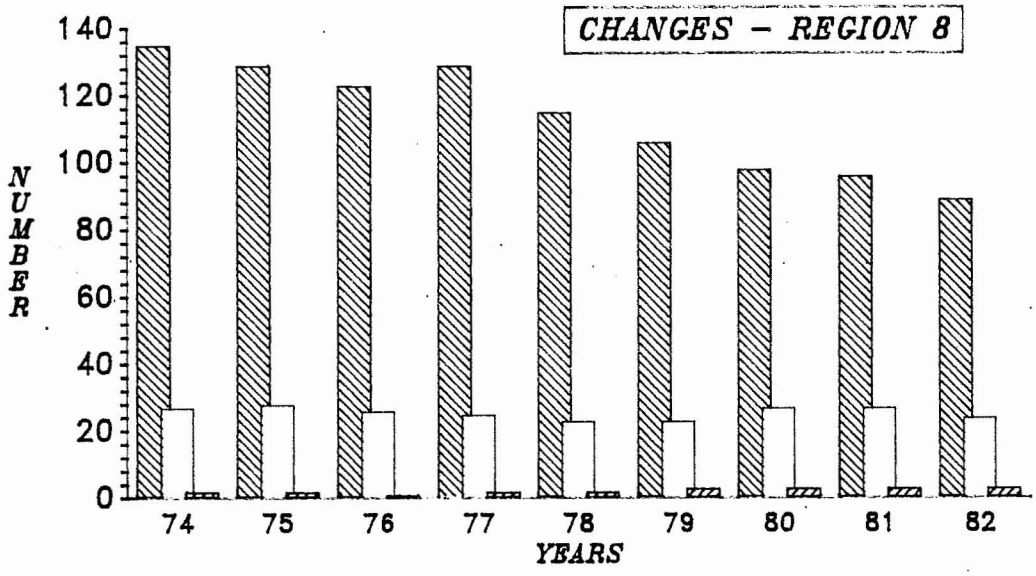


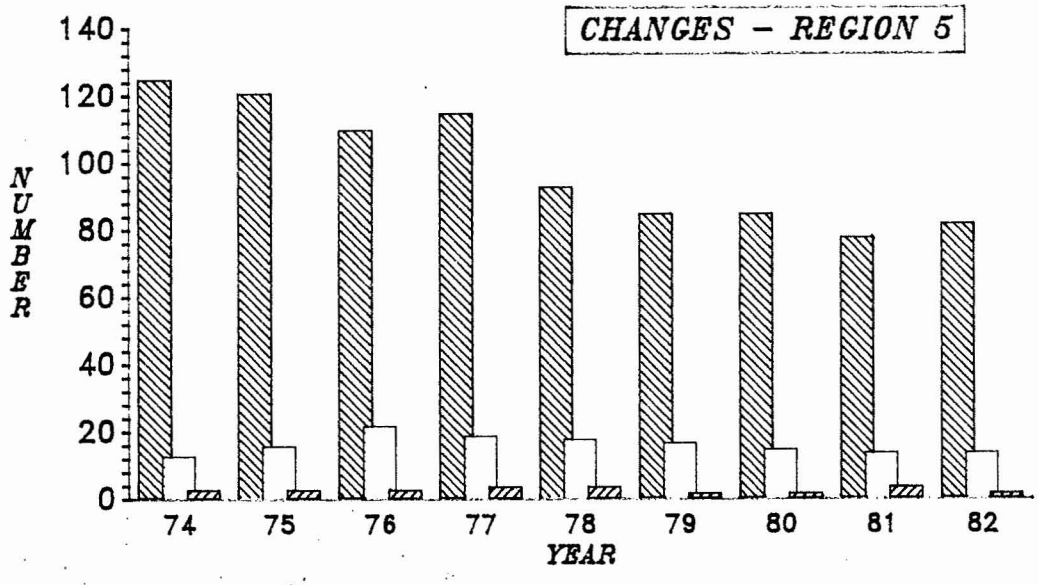


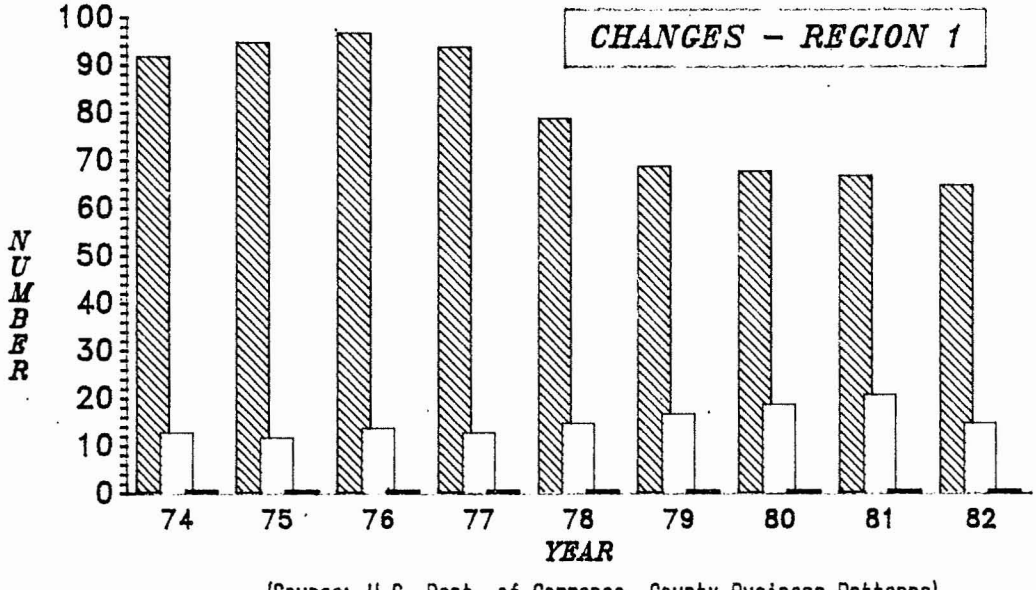


(Source: U.S. Dept. of Commerce, County Business Patterns)

Service Stations
General Repair Shops
Specialty Shops







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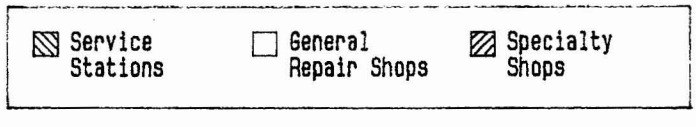
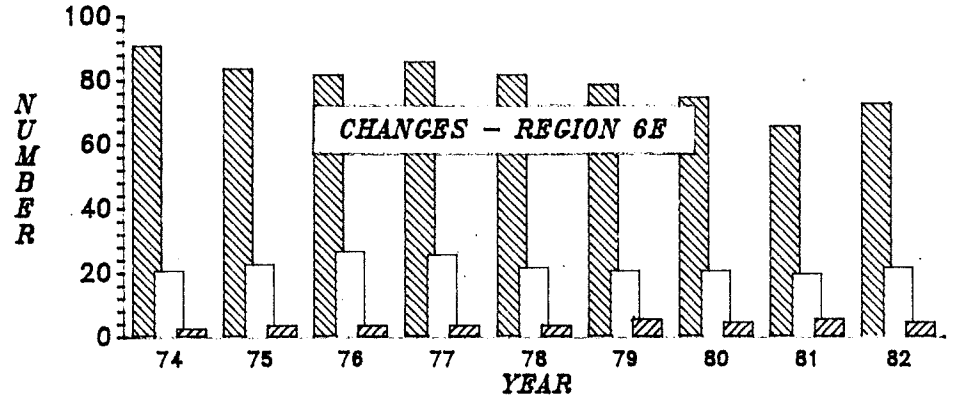
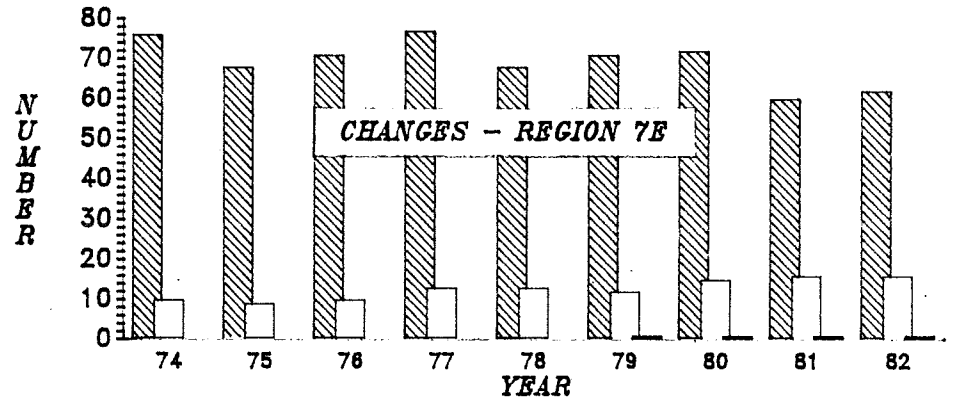
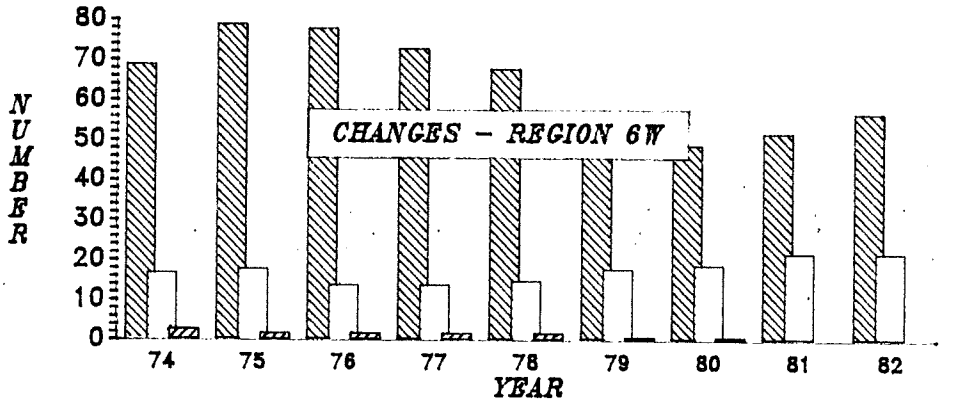
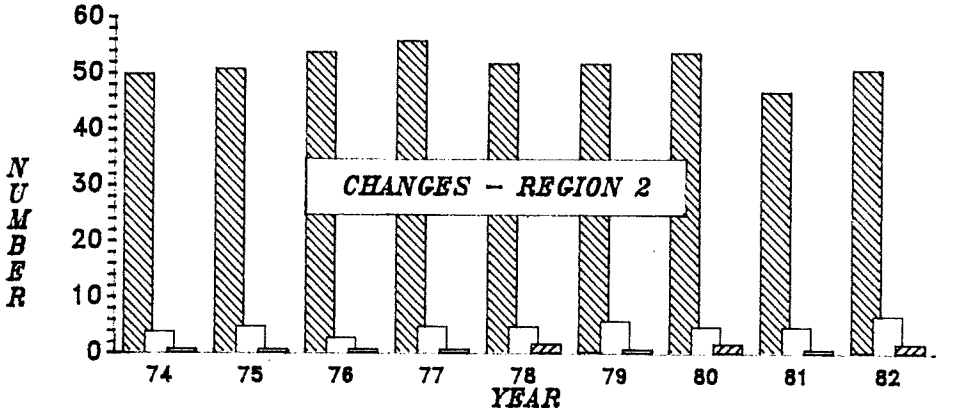


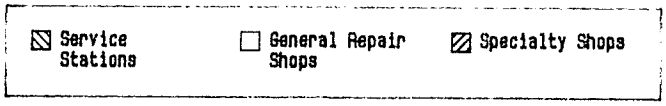


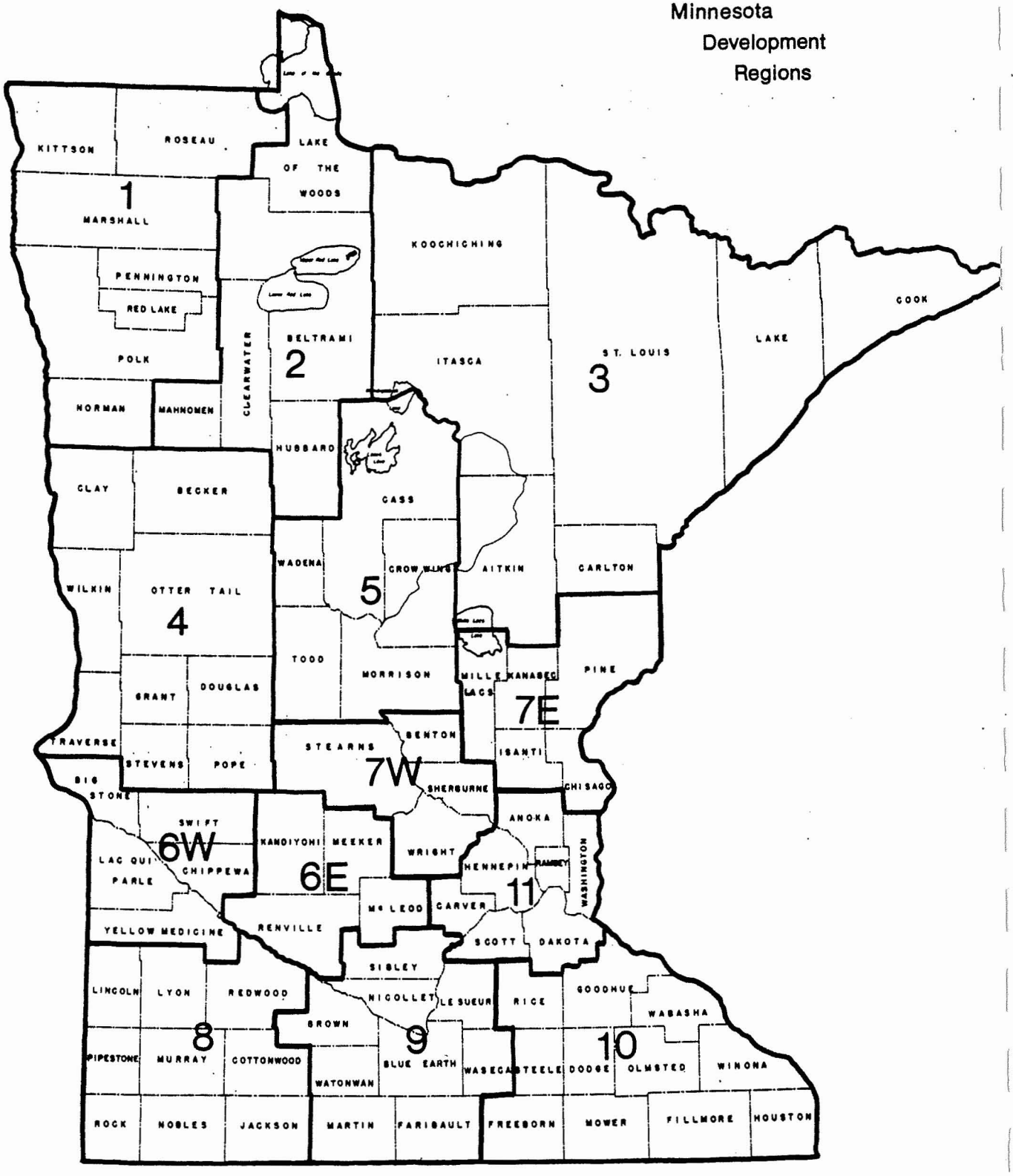






(Source: U.S. Dept. of Commerce, County Business Patterns)




Minnesota
Development
Regions
KITTSON
ROSEAU
LAKE OF THE WOODS
1
MARSHALL
PENNINGTON
RED LAKE
POLK
NORMAN
MAHNOMEN
CLEARWATER
BELTRAMI
2
KOOCHICHING
ITASCA
3
ST. LOUIS
LAKE
COOK
HUBBARD
CASS
CLAY
BECKER
WADENA
CROW WING
5
AITKIN
CARLTON
WILKIN
OTTER TAIL
4
TODD
MORRISON
MILLE LACS
KANABEC
PINE
7E
GRANT
DOUGLAS
TRAVERSE
STEVENS
POPE
STEARNS
BENTON
7W
ISANTI
CHISAGO
SHERBURNE
BIG STONE
SWIFT
6W
KANDIYOHI
MEEKER
WRIGHT
ANOKA
LAC QUI PARLE
CHIPPEWA
6E
HENNEPIN
RAMSEY
11
WASHINGTON
McLEOD
CARVER
YELLOW MEDICINE
RENVILLE
SCOTT
DAKOTA
SIBLEY
LINCOLN
LYON
REDWOOD
NICOLLET
LE SUEUR
RICE
GOODHUE
WABASHA
BROWN
8
9
10
PIPESTONE
MURRAY
COTTONWOOD
BLUE EARTH
WASECA
STEELE
DODGE
OLMSTED
WINONA
WATONWAN
ROCK
NOBLES
JACKSON
MARTIN
FARIBAULT
FREEBORN
MOWER
FILLMORE
HOUSTON

APPENDIX - E

GLOSSARY

BLS: U.S. Bureau of Labor Statistics

COMPANY-OPS: Retail outlets owned and/or managed by refiners or jobbers.

C-STORE: Convenience store, e.g. 7-11 stores.

DEALERS: Retailer; may own store or lease it from refiner or jobber.

Branded Dealer: Dealer who is retailing brand name products; usually a dealer operating under a franchise agreement with one of the ten to fifteen largest refiners.

Independent Branded Dealer: branded dealer who owns store.

Lessee Dealer: branded dealer who leases store in addition to brand name franchise.

Unbranded Dealer: Dealer who is retailing products on the basis of price not name brand. Generally has no affiliation with major refiners.

DEED: Minnesota Department of Energy and Economic Development.

DIRECT DISTRIBUTION: Refiner distributes product directly to retail level bypassing jobber network.

DIVORCEMENT: Statutory prohibition of refiner owned or operated retail gasoline sales is known as divorcement.

DOE: U.S. Department of Energy

DOWNSTREAM: Refers to relative level in a vertically integrated firm, (i.e. retailing is downstream from production.)

FRANCHISEE: See Dealers: Lessee Dealer.

INDIRECT DISTRIBUTION: Refiner distributes product to retail level using jobbers.

JOBBERS: Wholesalers. Jobbers purchase various petroleum products from suppliers and resell them to commercial accounts, independent dealers, lessee dealers and other wholesalers, and transfer them to their own retail outlets. Jobbers may provide: transportation, storage and/or finance accounts.

Branded Jobbers: Distribute product for one refiner.

Unbranded Jobbers: Distribute product with no brand name; usually purchase from multiple suppliers.

Multi-Branded Jobbers: Distribute product for several refiners.

MAJORS: Inconsistantly defined term used to distinguish between the relative economic power of petroleum industry companies. In some cases used to denote the ten to fifteen largest firms in the industry; the firms that are fully vertically integrated and have a nationally operated franchise system. DOE uses term to differentiate refiners based only upon total refining capacity.

OPEN SUPPLY: Statutory requirement that no contracts can restrict dealers to using a single supplier.

PADDII: Petroleum Administration for Defense District Two; A DOE administrative definition for the Midwest region.

PUMPER: Industry jargon for high volume essentially gas only retail stores.

REFINER: In this report refers to the manufacturing aspect of operations. Refiners may trade or sell product to other refiners (see Supplier.)

RETAIL CHAIN-MARKETER: Term used to describe type of operation popularily conceived of as the independent gas stations. Usually consists of a network of retail stores (leased, owned or jobber company-ops) marketing an unbranded product, e.g. Fast-Gas, operated by a jobber. Also known as Chain Discounter.

SUPPLIER: In this report refers to a business that transfers or sells refined products to the wholesale or retail level. All suppliers are also refiners; not all refiners are suppliers.

UPSTREAM: Refers to relative level in a vertically integrated firm, e.g. crude production is upstream from refining.

VERTICAL INTEGRATION: A type of business structure based upon ownership and/or control within a single company of all stages of the product cycle from raw material production to retail product sales. In petroleum industry means ownership/control from crude oil production through retailing of refined products, including all transportation and refining operations.