FINAL REPORT
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on

AN ANALYSIS OF THE DEPARTMENT OF ENERGY'S FUEL ALLOCATION PLAN AND RELATED POLICIES

prepared for

U.S. GOVERNMENT
SMALL BUSINESS ADMINISTRATION

by

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EXECUTIVE SUMMARY

The objective of this research program was to analyze the impact of the Department of Energy's fuel allocation regulations on the economic viability of small gasoline marketers.

The first part of the study laid out the theoretical setting (microeconomics) of the fuel allocation regulation and developed the conceptual basis for impact analysis. In order to clearly understand the workings of the allocation regulations and how they affect the industry, a historical and institutional analysis of the gasoline industry was performed. This analysis showed that the gasoline industry is characterized by the dominance of a highly integrated (vertically and horizontally) refiner, distributor, and retailer network (oligopoly) which has the potential for exerting strong controlling influence in the market place. The analysis also showed that the number of gasoline retail outlets has been declining since 1972, with independently owned outlets showing the largest decline. In terms of market shares, refiner/marketers in general have increased the share of gasoline sold through their retail outlets. The market share of gasoline sold through independently owned outlets has declined.

Determining whether these observed trends have been caused or exacerbated by the allocation regulations requires a quantitative analysis that demands a detailed data base, which at the present does not exist. Recognizing the fact that there exists a deficiency of adequate data, IPA has developed a methodology especially designed for
this impact analysis. Issue Identification and Screening Matrix (IISM) is a research tool specifically tailored to analyze issues and problems where data limitations hamper a quantitative approach. Using specified areas of substantive interest, the IISM permits those areas of concern to be subjected to analysis and systematic evaluation.

The mandatory petroleum allocation program entails the complex interactions of many parties associated with the regulations. With this as a background, the Issue Identification and Screening Matrix was used to structure the nature and substance of those interactions, and identify and analyze the ways in which the allocation regulations affect the various segments of the petroleum industry.

Through a review of pertinent literature, interactions with DOE personnel at both the national and regional levels, and a series of meetings and discussions with the private sector of the gasoline industry, an initial set of 29 issues were identified. These issues were then evaluated for relevance and importance, using the Issue Identification and Screening Matrix. Through the analysis eleven issues were identified as the final candidates for more thorough investigation. Each of the eleven issues was found in some way or another to point-up serious debilitating affects that the regulations have on the economic activities of independent gasoline marketers.

Each of the issues was stated in the form of a hypothesis and then evaluated in terms of impact categories of: efficiency, equity, entry and exit, and property rights and ownership. The
following eleven issues have been analyzed in great detail in the analysis section of Chapter V.

1. As the allocation regulations stand, it is easier to obtain new station allocations from DOE than it is to get a base period allocation revised upwards for an already existing station.

2. The allocation regulations have been amended in such a way as to enable middle marketers to upward certify themselves, creating the potential for a reduction in the allocation fraction during periods of constrained supply.

3. The allocation regulations were intended to serve as a policy to handle the nation's short-term energy problem, but has been extended over the past six years. In order to make them adaptable to changing market conditions, a patchwork of confusing "band aid" amendments are continuously appended to them.

4. Jobbers are not required by DOE to downward certify when stations they supply close, thus allowing them to channel the gasoline to their outlets.

5. Suppliers are legally obligated to supply their historical customers amounts of gasoline equal to each customer's base period allocation, subject to the allocation fraction.

6. In assigning an allocation to a new station, ERA Regional Offices fail to a) gauge the volume of gasoline that the market can absorb or b) fully consider the impact that the new station would have on market area competitors.

7. Disparities exist in the way the various DOE Regional Offices interpret and implement the allocation regulations.

8. The use of the base period arbitrarily freezes market relationship.

9. The Department of Energy is slow in processing applications, thus making it difficult for marketers to respond to a rapidly changing market.

10. Supply obligations tie marketers to specific suppliers and prevent them from obtaining their products from the cheapest source.
11. Neither the national nor the regional DOE offices closely monitor the distribution of motor gasoline, nor have they developed a data base for monitoring these transactions.
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CHAPTER I - INTRODUCTION

The year 1973 marked two major events for the petroleum industry: the Arab Oil Embargo and the quadrupling of crude oil prices by the Organization of Petroleum Exporting Countries (OPEC). In combination, these two actions were critical events in a decade that created shortages of petroleum crude oil on the international market. The world would no longer know the luxury of cheap petroleum-based products; most importantly, fuel oils and gasoline. With world demand exceeding supplies, the western world has been in a state of near panic ever since. The ramifications of these events continue to affect the entire petroleum industry and the business/economic environs through which it works.

As part of the U.S. economic stabilization and regulatory programs, allocation and price controls have been imposed at various points in time over the past several years. The 1970's have witnessed a
series of price controls beginning with the establishment of the Economic Stabilization Program in August, 1970.

This program went through several phases, but of particular importance to this study is Phase III of the Voluntary price Standards which was amended by Special Rule No. 1., on March 6, 1973. Under this rule, for the first time, price controls were established expressly for the petroleum industry. Under Special Rule No. 1, mandatory price controls were imposed on the sale of crude oil and refined petroleum products by firms with annual sales of $250 million or more.

The Emergency Petroleum Allocation Act (EPAA), enacted November 27, 1973, provided the basis under which the mandatory Petroleum Allocation and Price Regulations were issued on January 14, 1974. This act provided for comprehensive controls for both allocation and price of petroleum products at virtually all levels of the petroleum industry. Although these regulations have been amended by the Energy Policy and Conservation Act (EPEA), PL94-163, December 22, 1975 and the Energy Conservation and Production Act (ECPA), they are still under enforcement to date.

There is the prospect for a worsening of motor gasoline shortages in the years ahead. With continued implementation of the allocation regulations in the face of an existing oligopolistic petroleum industry and a differentiated market power between refinery stages and distribution and retail stages, serious considerations of equity and efficiency do arise as they affect the economic viability of independent retail marketers.
It is the implications and ramifications of these events that this study focuses upon, especially those aspects of the allocation regulations that most directly affect the wholesale and retail segments of the industry, i.e., the petroleum industry's and the federal government's responses and subsequent and continuing actions to solve the problem.

**Objectives And Scope**

Recent changes that have taken place in the distribution and marketing of motor gasoline pose serious questions as to the economic viability of independent retail outlets. Given the increased share of company-owned retail outlets, rapidly rising gasoline prices, and the prospects of a continuation of fuel shortages, the Department of Energy's fuel allocation regulations may compound the economic problems confronting the small independent retailer.

Under normal operating conditions, (the supply of gasoline is sufficient to meet demands), there exist no serious competitive threats to the economic survival of independent retailers. However, under conditions of constrained supply or shortages, there exist economic incentives for some segments of the distribution system to manipulate and exploit the shortage situation by using their power in the marketplace.
Therefore, within the context of a constrained supply situation and the government-imposed allocation regulations and price controls, the purpose of this study is to identify the relevant actors, analyze the interactions that occur between them, and assess the possible effects that any controls may have upon the competitive positions of the relevant actors (in particular, small retail and wholesale jobbers) and components of the distribution system.

In more specific terms, the primary objectives of this study are to:

A. Provide a synthesis of the gasoline industry both historically and institutionally.

B. Present a coherent specification of the Department of Energy's fuel allocation regulations.

C. Evaluate the impact of the Department of Energy's fuel allocation plan on small gasoline marketers in terms of:

   Efficiency impacts, including restrictions of exit and entry into the retail activity as well as discriminatory behaviors that may pose anti-competitive situations.

   Equity impacts, including the effects of size and power that could lead to circumvention and abuse of the regulation as well as abuses to the property rights of the independent retailer.
Definition Of Important Terms

Throughout this report, several terms are used to describe specific characteristics of the allocation regulations. The following definitions are provided for clarity.

The Allocation Plan or Allocation Regulations. The January 14, 1974 Mandatory Petroleum Allocation Regulation is commonly called the Allocation Plan. The Emergency Petroleum Allocation Act (EPAA), enacted November 27, 1973, under which the Mandatory Petroleum Allocation and Price Regulations were issued January 14, 1974, provided for comprehensive controls for both allocation and prices of petroleum products at virtually all levels of the petroleum industry.

Base Period. The "base period" is the mechanism used in the allocation regulations to establish a uniform basis by which the amount of supply of motor gasoline is determined for each retail marketer. The (respective) wholesale supplier calculates his current supply obligations according to the summation of his customers' purchases during an established period of time. This established period of time is known as the base period. A retail marketer is entitled to receive the same amount of motor gasoline that he obtained from his wholesale supplier during the base period month; subject to his supplier's allocation fraction. The base period is determined by the Department of Energy. The current base period is November, 1977, through October, 1978. (Similarly, each refiner is obligated to supply his wholesale customers of the base period.)

Allocable Supply. Allocable supply constitutes the total amount of gasoline a refiner has available for wholesale and retail customers, after having fulfilled priority user and state set-aside requirements.

Allocation Fraction. The Allocation Fraction is the ratio of allocable supply to supply obligations. Essentially it is a barometer of the amount of gasoline available for wholesale and retail customers; a ratio of less than one indicates that supply obligations exceed allocable supply, and that gasoline will have to be distributed among base period purchases accordingly.
Market Area. The market area defines the trade zone that an existing station serves or a prospective station will serve. The delineation of this area varies, depending on whether the location of the outlets is in a city, suburb, or major intersection of a freeway system.

Moratorium. Moratorium is an option plan calling for a suspension of new station allocation assignments. In effect, it would freeze new outlets from entering the market.

Aggrieved party. An aggrieved party is a retailer or supplier who could be adversely affected by the approval of a new station allocation assignment and/or the introduction of a new station into a market area.

Downward Certification. The term downward certification describes a proposed procedure which would reduce the amount of gasoline channeled to resellers, when one of the stations they serve closes. A downward certification provision would diminish the supply going to the reseller by an amount equal to the volume of gasoline allocated to the closed station.

Upward Certification. Upward certification is an option available to wholesale resellers through Section 211.13 (c) of the regulations. This option permits resellers to automatically increase the amount of gasoline they are entitled to receive from their suppliers, when they offer to be a willing supplier to a new customer or are directed by the Regional Economic Regulatory Administration to serve a new customer.

Organization of Report

This report has six major components. Chapter II presents the theoretical setting of the fuel allocation regulations and develops the conceptual basis for analyzing the regulations under consideration.
In Chapter III the historical and institutional setting of the gasoline industry is presented. This section will identify the historical patterns and institutional changes that the gasoline industry has experienced throughout its development.

Chapter IV will present a specification of the Department of Energy's Fuel Allocation Plan. This section will review the allocation plan and identify those segments of the plan that are controversial regarding equity and efficiency as they lend themselves to the activities of the independent gasoline dealer.

Chapter V identifies specific issues of concern in the allocation regulations and the way they are administered and implemented. These issues are then analyzed to determine if they impose selective restraints on the economic activities of particular groups of the gasoline distribution system.

Summary and conclusions, policy implications and recommendations are presented in Chapters VI and VII, respectively.
CHAPTER II - THEORETICAL SETTING OF ALLOCATION REGULATIONS

Microeconomic Background

Any approach designed to evaluate public policy or program must (a) consider the objectives towards which the program or policy has been directed; (b) develop a measurement and analytic format that will test and ascertain the extent to which the identified objectives have been achieved; and (c) identify any program or policy impacts or repercussions that are either not consistent with the specified objectives or were not anticipated when developing the program or policy. This study is designed to focus largely on the last consideration.

Controls established under the EPAA enacted November 27, 1973 (under which the mandatory Petroleum Allocation and price Regulations were issued on January 14, 1974) were designed to:

1. Preserve in a shortage situation, to the extent possible, an economically sound and competitive petroleum industry including the competitive viability of the independent segments of the industry, and

2. Assure equitable distribution of refined petroleum products at equitable prices.

Included among the controls is the Domestic Crude Oil Allocation (Entitlements) Program created to eliminate the competitive marketing advantages of those refiners with disproportionate access to price controlled domestic crude oil. By eliminating this advantage, it was felt that cost would be brought into approximate parity, assuming that
market competition would result in equitable prices for consumers of petroleum products.

Of central importance to the present study is the fact that it has been assumed that under the allocation portion of these regulatory controls, all regions and economic sectors would receive, to the extent possible, equitable shares of available crude oil and Petroleum products. Accordingly, a priority allocation system and state set-asides for certain petroleum products was created for the purposes of meeting local hardships and emergency requirements.

An industry structure and profile of the gasoline market will be presented in the next section. As the analysis will indicate, the gasoline market is characterized by the dominance of a highly integrated (vertically as well as horizontally) refiner - distributor retailer network (oligopoly) which has the potential ability of exerting strong controlling influence in the market place.

On the demand side, transportation demand for gasoline is characterized as inelastic. As Houthakker and Verleger (18) indicated in 1973, a 10 percent increase in the price of gasoline would lead to a 3.4 percent decrease in the use of gasoline in a one year period (short run) and a decrease of 6.7 percent in gasoline use in a period longer than a year. Data Resources Incorporated (9), showed that the long-run demand for gasoline is even more inelastic - 4.1 percent instead of 6.7 percent.
Given these characteristics of supply and demand, a third dimension was superimposed on the gasoline market in 1973 which led to the emergence of the mandatory gasoline allocation plan - the Middle East Crisis and the Arab Oil Embargo.

As already stated, an increase in gasoline prices leads to a less than proportionate decrease in the quantity consumed. On the other hand, a given percentage decrease in quantity available (supply shortages) leads to a more than proportionate increase in prices, if the market is left untampered with. The impact of these increases can be felt greatly in an economy where public transportation is less than adequate, and, where the private automobile is the most widely used mode of transportation. The severity of the shortage and its economic consequences could even be worse on families with fixed incomes or on those that are on the lower levels of the income strata, and who do have the need to drive their motor vehicles in their daily economic activities.

Under ordinary conditions, shortages are rationed and excesses dispensed with through the dynamics of the market mechanism. In the case of the 1973 gasoline shortage, however, two prevailing conditions have led to government intervention. The first case is the institutional setting of the gasoline market itself. As discussed earlier, a few firms with substantial market strength dominate the gasoline market. It was the government's feeling that if the pricing
and allocation of scarce gasoline resources were left to the market, dotted by oligopolistic sellers, there could be severe and inequitable hardships imposed on certain sectors of the economy.

The second case was the inelastic nature of the demand for gasoline, especially in the short-run. It is a generally accepted phenomenon of a free market system that when a good that has economic value gets scarce, it is likely that it would be followed by higher prices. What the concomitant price increases would be is dependent upon the elasticity of demand. In the case of gasoline, empirical evidence seems to indicate that a reduction in supply would lead to a more than proportionate increase in prices. The welfare implications of increased gasoline prices thus were perceived to be so serious that the U.S. Congress has felt it necessary to interfere on behalf of the well-being of the affected parties by imposing a de facto price regulation and a rationing scheme on suppliers, simultaneously.

**Equity And Efficiency Considerations**

Given the oligopolistic nature of the petroleum industry and the differentiation of market power between the refinery and distribution stages, it is not surprising that a number of important considerations arise with respect to the impact of this differentiated market power - particularly as it relates to the economic concepts of equity and efficiency.

*This, of course, holds true for any normal good or services with a negatively sloped demand curve.*
Before turning to these concepts, it is worth noting the market conclusions discussed earlier, since they set the framework for the evaluation. First, it must be kept in mind that the basic market conditions under which supply, demand, and price equilibrium would be competitively determined do not exist in the petroleum industry. One immediate result of the fuel allocation scheme is to generate "rationing by fiat". This rationing scheme is presently being carried out by the petroleum producers through their control of the distribution system. Second, the price impact and adjustment process implied by the allocation regulations not only have significant rationing impacts but serious welfare implications as well. These welfare implications would exist (given the scope of price changes) even if constrained supply conditions did not exist.

With regards to equity considerations, major impacts that deserve closer investigation are those issues of market power and size. This is a situation where few large firms may have the potential, and ability to avoid or manipulate the allocation regulations in such a manner that they deprive the property and/or distributional rights of small independent retailers.

Economic principles of competition state that resources are used efficiently if they are employed in that activity where there are no better alternatives for their use. In other words, a factor of production would be involved in that activity where it would generate the maximum net return per unit of investment.
In this context, if markets are fully competitive, prices would be determined by demand and supply conditions, and there would be no restrictions on entry into or exit out of the industry in the long run. Profits will serve to set the amount of production to be made available, and competitive pressures will assure that each producer operates efficiently. For example, if profits are high, new entrepreneurs enter the industry to take advantage of the opportunity and thereby increase supply which tends to create a new equilibrium in response to whatever exogenous factors might have stimulated demand originally.

As will be explained in the next chapter, the petroleum industry is not characterized by competitive conditions, and the flow of resources and levels of production are set under oligopolistic conditions, with solutions less efficient than those defined by the economic concept of pure competition.

The situation has been further constrained by the (non-market) impact of the fuel allocation program and sharply reduced supply (rising price) conditions. The analysis of efficiency concepts must, therefore, consider the specific changes induced by the fuel allocation programs - over and above what was already developing independently of the fuel allocation scheme or reflected in long term trends underway before the implementation of the allocation controls.
The review of literature on the industry and its economics of competition suggests that the most critical area likely to be affected by the fuel allocation scheme is the case of entry and exit, especially at the distribution level. In that context, the focus of analysis will be on:

1. The impact of the allocation scheme in terms of restricting entry or exit into retail activity, particularly on the small independent wholesale jobber or retailer.

2. The extent to which inefficient entrepreneurs may be "locked" into retail petroleum activity.

3. The impact in terms of discriminatory actions that might emerge in terms of competitive elements within the industry.

**Identification Of Major Actors**

There are four distinct segments of the petroleum infrastructure that must be recognized and understood in order to develop a coherent picture of the interactions within the industry: 1) crude oil suppliers, 2) domestic refiners, 3) wholesale and retail distributors (independent and branded), and 4) the ultimate consumers. This structure is "shadowed" by a fifth and very important actor, the U.S. Government/Department of Energy, which, through the implementation of its mandatory petroleum allocation and price regulations and associated legislation, hoped to ensure a competitive, free market environment within the industry. Figure 1 presents a representation of the U.S. Petroleum industry sectors, and Figure 2 presents a detailed picture of the motor gasoline distribution network.
Federal Government/DOE: mandatory petroleum and price regulations and other applicable legislation

Figure 1. BASIC STRUCTURE OF THE PETROLEUM INDUSTRY
Figure 2. A PICTORIAL PRESENTATION OF MOTOR GASOLINE DISTRIBUTION SYSTEM.
At the crude oil supply level, two distinct actors are identifiable; namely, domestic crude suppliers, and the OPEC Cartel. While the U.S. government can impose its controlling influence on the domestic suppliers, the OPEC Cartel is clearly outside of the jurisdictions of the U.S. government.

At the domestic refiner/distributor/retailer level, there are approximately 19 large independent refiners and 120 small refiners that seem to give the impression that a healthy state of competition exists. However, a more thorough analysis shows that the large integrated (major) refiners have developed a highly integrated (vertical and horizontal) system where they exercise their controlling influence over the domestic gasoline market.

The next group of actors, wholesalers resellers, constitute the main linkage between the refiners and the consumer. This category of marketers includes independent wholesalers, terminal operators, consignees, brokers, and branded and unbranded jobbers.

In a theoretical economic sense, the wholesaler reseller is a price-taker. The individual does not influence the nature of the market, i.e., the selling price of the product. Although the individual contracts held by the wholesalers resellers differ among them, individually they have very little bargaining power vis-a-vis the refiners. They are legally bound by their contracts but may be subjected to supply cutbacks by the refiner without substantial recourse.
Jobbers make up the largest portion of the wholesale gasoline distribution network, embracing two types of gasoline wholesellers:

1. **branded jobbers**, distributors who are affiliated with a refiner and supply gasoline to outlets operating under the refiner's name; and

2. **non-branded jobbers**, distributors who are not affiliated with a refiner and provide gasoline to non-branded independent retail outlets.

Branded jobbers generally rely on one integrated refiner for their gasoline supplies, while their non-branded counterparts acquire gasoline from several sources, including integrated refiners, independent refiners, and the spot market. Along with their wholesaling activities which involve supplying gasoline and heating oil to retail outlets and a variety of bulk users, many jobbers also own and operate retail outlets. Most non-branded independent outlets, for example, are jobber owned and either operated or leased out by them. Most jobbers have the dual role of wholesaler and retailer.

Little information exists as to the number of jobbers; current estimates place it at anywhere between 12 and 18 thousand in 1979. But, information about the volume of gasoline channeled through jobbers indicates that their role in the distribution network has been expanding in recent years. Together, branded and non-branded jobbers distributed slightly more than 35 percent of the gasoline produced by U.S. refiners in the third quarter of 1972. By the third quarter of 1979, they were distributing nearly 50 percent of all refined gasoline. Except for 1973, when non-branded jobbers suffered cut-backs in the wake of the Arab Oil Embargo, jobbers have generally increased the volumes of
gasoline they distribute, with non-branded independents showing a somewhat greater growth in volume distributed. The share of gasoline distributed by branded and non-branded jobbers increased from 20.6 percent and 14.6 percent, respectively, in 1972 to 26.8 and 22.4 percents, respectively, in 1979. While branded jobbers showed a 6.2 percent increase during this seven year period, non-branded jobbers showed a gain of 7.8 percent (14).

The last group in the distribution line is the retail dealers/outlets which distribute the gasoline directly to the individual consumer. Theoretically there exists healthy competition among the retail dealers. However, because the individual dealer is technically a price-taker, he has little or no influence over the price he pays for his product. Individually he is a captive of the petroleum refiners and distributors.

The task of impact analysis will entail an interaction with the various subcomponents of these actors. How the allocation plan affects each of these actors, and how they in turn affect this plan will be traced and documented in the analysis section of this study.
CHAPTER III - HISTORICAL AND INSTITUTIONAL SETTING
OF THE GASOLINE INDUSTRY

A. Structure And Conduct Of The Gasoline Industry

Gasoline marketing has traditionally been dominated by a relatively small number of petroleum companies. Estimates of the number of dominant companies differ and have fluctuated over the years, ranging anywhere from 15 to 20 major and semi-major firms. The industry's structural characteristics mark it as an oligopoly, an industry whose operations and practices are dominated and dictated by a few, large companies.

Within this oligopolistic structure, the major firms are vertically integrated. These firms not only market gasoline, but are also engaged in crude oil exploration, production, transportation, and refining. Domination of the different levels of production and distribution by a relatively few companies has characterized the industry throughout its history. In 1939, eighteen large companies

*Oligopolies are composed of firms which are conscious not only of their own individual influence on price but also the influence the other rival firms might have. An oligopolist in any of his actions must always consider the potential relation of his rival firms. The oligopolist attempts to maintain a peaceful co-existence with his competitors and not to fight them. A fight among giants may end by crippling all concerned with no one benefiting. In effect, tacit collusion exists among the few large dominating firms that leads to a stability of price and production which may not represent profit maximization for any one firm but rather a profit situation in which all can find tolerable existence. Such a situation forces oligopolists to turn to other forms of competition than price, such as product differentiation and services.*
accounted for 43.5 percent of the total crude oil production, and produced 75.85 percent of all refined petroleum products, thus providing nearly 80 percent of the domestic gasoline (37).

In addition to the major and semi-major companies, there is also a group of twenty smaller integrated firms. Like their larger integrated counterparts, they are involved in oil exploration, production and distribution, although on a smaller scale and with far less influence over the industry.

The rest of the gasoline marketing segment is comprised of small nonintegrated and partially integrated firms. Commonly referred to as independents, this group includes firms solely involved in wholesale and retail gasoline marketing and firms involved in both refining and marketing. None of them have crude oil sources, thus making them dependent on integrated firms for their oil supplies.

The retail marketing network can generally be defined along the lines of the types of companies that comprise it. Integrated firms generally market their gasoline through what are known as branded retail outlets; that is, they sell their gasoline under the name of the company with which they are affiliated.* These outlets are either 1) owned by the integrated firm and operated by salaried personnel, 2) owned by the integrated firm but leased to an independent businessman, or 3) owned

*Some of the major and semi-major companies have purchased and now market their gasoline through what are known as "secondary brand" outlets. For example, the Mobil Oil Corp. markets some of its gasoline through Sello, Reelo, Hi-Val and Big Bi outlets. Secondary outlets sell discount gasoline, a fact which explains why integrated firms acquired them. They are used to compete with independent retailers, who, through the sale of discount gasoline, had made significant advances in marketing and impinged upon the marketing profits of integrated companies.
and operated by an independent businessman. In the past, most branded outlets were full service stations with relatively low volume gasoline sales. Besides gasoline, they provided automotive services and automobile accessories.

In recent years, however, there has been a trend toward high volume "gas only" branded outlets, much like those operated by non-branded competitors. Branded outlets are supplied with refined gasoline through an intermediary, known as a jobber, or are supplied directly by the integrated company itself. Table 1 presents a breakdown of retail gasoline marketers by average monthly sales and market shares.

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<tbody>
<tr>
<td>Refiner Marketers</td>
<td>14,328</td>
<td>80,595</td>
<td>18.8</td>
</tr>
<tr>
<td>Independently owned &amp; leased branded</td>
<td>138,000</td>
<td>60,756</td>
<td>69.4</td>
</tr>
<tr>
<td>Non-branded independents</td>
<td>11,900</td>
<td>31,084</td>
<td>11.8</td>
</tr>
<tr>
<td>U.S. TOTAL</td>
<td>164,228</td>
<td>37,596</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Independent retailers market their gasoline through non-branded outlets equipped for high volume sales. With the exception of those outlets that are integrated with refiners, non-branded outlets are independently owned by large wholesale jobbers. Their principal purpose is to sell gasoline and petroleum products at discount prices. Rarely, if ever, do they provide automotive services or accessories, basing their competitive edge instead on the appeal of low priced gasoline.

With some minor exceptions, the history of the industry and its marketing segment is the history of the vertically integrated firms that comprise much of it. The industry's response to different economic and institutional conditions largely mirrors the experiences of these firms. Through significant involvement in refining, distribution, control of crude oil supplies, and all consequences of vertical integration, the major companies have spearheaded the development of gasoline marketing and have been instrumental in shaping its structure.

Opinions differ over the reasons motivating vertical integration in the petroleum industry, and, over the need for it. Some see the tendency toward vertical integration by petroleum companies as being rooted purely in the economics of the industry as an efficient solution to the problems posed by them (24). Others see it as part of an effort to protect investments at different levels of the industry in response to changing economic conditions (23); the corollary of this being a quest for balance (10). Still others regard it as the result of a conscious drive to harness monopoly power and maximize profits (1).
Whatever the reasons behind vertical integration, most would agree that it has been a powerful force which has shaped all levels of the industry. With this in mind, the following section discusses the evolution of the retail gasoline marketing segment of the industry, underscoring the crucial role that vertical integration and vertically integrated firms have had in it.

B. Pattern of Growth And Development

The oil companies and major refiners were not engaged in retail marketing in the early 1900's. Product distribution, principally for selling kerosene, was carried out through multipurpose grocery and hardware stores in which petroleum products were among the many products sold. Most oil companies directed their early efforts toward expanding oil production, and in particular refining capacity. Reflecting this emphasis was the growth and dominance of the Standard Oil Trust, most of which was founded on monopoly control of refining and transportation.

With the break-up of the Standard Oil Trust in 1911, the industry experienced a major structural change. From this break-up, there emerged seven major petroleum companies, each seeking to integrate forward and backward into oil production, refining, and pipeline transportation. The period starting around 1911 marked the start of a time in which gasoline marketing became an integral segment of the petroleum industry (23). During this period several economic and technological factors combined to give birth to the gasoline
marketing segment and motivate oil companies to extend their integration into gasoline marketing, spurring a proliferation of retail outlets.

The major impetus came from the burgeoning and rapidly growing automobile market. Between 1910 and 1925, automobile registrations increased forty fold from 458,000 to nearly 17.5 million, providing a compelling need for retail expansion (5). Other factors, however, came into play as well, including:

1. the need to capture and secure market outlets to absorb rapidly expanding crude oil production;
2. the related need of stabilizing and increasing the often radical fluctuations in refining margins;
3. the need to guarantee continuity of refinery operations and protect against costly service cutbacks;
4. the desire to reduce distribution costs and capitalize on the economics and control provided by product pipelines.

Together, these factors played an important role in influencing the evolution and pattern of growth of the retail market. The growth and developments that took place in this earlier period formed a marketing structure that remains largely intact today. Of these, the first and last factors were the major forces behind the forward integration into and the growth in marketing which occurred after 1920, and peaked in the period between 1926 and 1935.

Whatever the focus of vertical integration, whether it be on marketing, refining or transportation, crude oil production has
historically been the keystone of integrated oil companies and the source of industry profits. Marketing practices within the industry have been dictated by the need to sell large volumes of crude (10).

A further incentive for marketing larger volumes of gasoline was the crude oil depletion allowance which enhanced the profitability of crude oil production. First incorporated into the federal tax statutes in 1913, the depletion allowance evolved through various changes into an effective tool for reducing tax liability and increasing after-tax crude oil profits. Some of the most significant changes were made in 1926 when the allowance was broadened to cover all oil wells, not just new discoveries. Also, the practice of permitting a percentage depletion was established and set at 27.5 percent of the price of a barrel of crude oil.

Together with the expanding supplies of crude oil, the expansion of product pipelines was a major contributing factor to forward integration by major oil companies (23). The dissolution of the refinery monopoly with the break-up of the Standard Oil Trust, moreover, had already prompted the major integrated oil companies to shift their focus to pipelines as the source of profits. From 1930 to 1939, the number of companies owning and operating pipelines grew from one to eight. And the profits derived from the pipelines constituted over 30 percent of all company profits, reaching a high 38.9 percent in 1939.

The rapid increase in automotive gasoline demand was met at first by the existing, independently owned channels of distribution - multi-purpose grocery outlets. A new addition to the distribution
network also emerged: the automobile repair garage. Both proved inadequate. Not only could they not handle the surge in demand, but countless reports of gasoline diluting and the proliferation of shabby outlets indicated that more company control was essential.

In response to these factors and the economic forces identified previously, the major integrated companies expanded into gasoline marketing in the early and mid 1920's (1,23). Their expansion strategy took two forms. First, they launched lease and license campaigns through which unattached service station owners were lured to lease their stations to the oil companies by liberal lease arrangements. These arrangements often included high rental fees and discounts on gasoline. In return for granting the company a lease, the station owner was given a license to sell the company's product.* With the intense competition for unattached stations pushing up the cost of rental agreements, however, the oil companies were motivated to embark on another expansion program - building and operating their own outlets.

While the marketing approach of the oil companies was to undergo a revision in the 1930's, these two strategies initiated an uninterrupted expansion in the number of retail outlets throughout the 1920's and the 1930's. In 1920, there were 15,000 service stations in operation. By 1929, the start of the depression, the number was 121,513, and continued to grow through the depression, reaching 197,468 in 1935 and 241,858 in 1939 (37,31).

*The leasing arrangements of the 1920's and early 1930's were exactly the opposite of the arrangements now in effect, in which the station operator leases the outlet from the company. The main integrated companies shifted to the latter approach in the early 1930's, a shift which took on greater momentum in the mid-1930's.
That the growth in the number of gasoline outlets continued unabated through the depression points up a critically important characteristic of the gasoline market. It has already been pointed out that the demand for gasoline is relatively unresponsive to changes in the economic climate and price. Gasoline consumption continued to increase throughout most of the 1930's despite the economic hardships brought by the depression, and the fluctuations in vehicle registrations caused by these hardships. The consumption trends of the thirties continued, with the exception of the war years, and accelerated in the late forties and early fifties.

The integrated oil companies started to alter their marketing approach in the early 1930's, when they began leasing company owned outlets to independent businessmen. In a sense, this change constituted a disintegration. With several states adopting severe chain store taxes in the mid-1930's, company leasing gained momentum as integrated companies sought to escape the levy by leasing out company owned outlets. The practice became known as the Iowa Plan, a terminology adopted in 1935 when virtually every refining company and jobber in Iowa leased their stations in response to the state's chain store tax. Besides the chain store tax, average gallonage in company owned stations had started to fall off in the late twenties, as a result of overbuilding and stiff price competition from both discounters (non-branded independents) and independently-owned branded outlets. At the same time the integrated companies were being pressured to lower prices to recoup lost volume, their stations were faced with a host of new costs and conditions, all of which tended to blunt their competitive edge.
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Additionally, company owned stations also were forced to pay the recently instituted social security tax. Unionization of company service station employees led to strikes and high employee wages. Also, company-owned stations lacked the flexibility of independently run stations, whose owners were "on duty" at all hours.

What emerged out of the 1930's in the wake of the Iowa Plans was a retail marketing segment composed of four types of retail outlets. These included 1) company owned outlets; 2) independently owned and operated retail outlets, also selling company brand gasoline; 3) company owned but leased outlets, marketing company brand gasoline; and 4) independently owned outlets not affiliated with an integrated company and selling non-branded gasoline. The last of these, the forerunners of today's non-branded independents, constituted the smallest portion of the retail marketing segment. But their marketing approach emphasizing high volume, low price sales was already leaving its mark on the market. And their mass merchandising philosophy would have an even greater impact on marketing and marketing practices in the next few decades.

C. Gasoline Marketing In The Post World II Period

The number of gasoline outlets dropped sharply during World War II, with the war effort drawing off gasoline and manpower and redirecting private sector resources. Little information exists as to the number of retail outlets operating in this period. But statistics
covering the postwar period mirror this trend. By 1948, the number of service stations had dropped to 188,305, a 22 percent decline from 1938 (31).

The decline in the number of stations was not the only pattern manifested in the postwar years. As gasoline consumption grew dramatically, the stations in operation increased both in size and in the number of workers they employed. In 1948, the average station's sales were nearly triple the average station's sales in 1938 and the gasoline marketing segment in general employed over 40,000 more workers (31).

The decline in the number of stations started to reverse after 1954, inaugurating a period of expansion which continued until 1972. Table 2 presents the number of retail outlets in the U.S., 1938-1972. Underlying this change was a shift in profit emphasis toward crude oil, the result of several factors which had been evolving in the years before and during the war:

1. A court decree issued in 1942 restricted pipeline earnings to 7 percent of common carrier pipeline assets, significantly diminishing the profits derived from pipeline operations.

2. The federal depletion allowance had already enhanced the profitability of crude oil production promoting a strong emphasis of crude output.
TABLE 2.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NUMBER OF OUTLETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1938</td>
<td>241,858</td>
</tr>
<tr>
<td>1948</td>
<td>188,305</td>
</tr>
<tr>
<td>1954</td>
<td>181,747</td>
</tr>
<tr>
<td>1958</td>
<td>206,755</td>
</tr>
<tr>
<td>1962</td>
<td>210,600</td>
</tr>
<tr>
<td>1966</td>
<td>214,500</td>
</tr>
<tr>
<td>1968</td>
<td>219,100</td>
</tr>
<tr>
<td>1972</td>
<td>226,459</td>
</tr>
</tbody>
</table>

3. State and federal prorationing laws which sought to conserve oil by equating supply and demand were implemented in the early 1930's. These laws regulated production and helped to dampen the often radical fluctuations in crude oil prices, ensuring that they would be relatively high and stable.*

These factors, combined with the freeing of gasoline stocks after World War II and the increasing use of the automobile, motivated integrated oil companies to expand their refining, distribution and marketing networks (see Table 2) in the 1950's and 1960's, an expansion that continued until 1972. The availability of surplus gasoline also aided the growth of non-branded competitors. As crude oil production expanded and the demand for gasoline grew, the number of both kinds of outlets increased dramatically.

Two types of retail gasoline outlets emerged out of the post-war period:

1. Non-branded independent outlets which marketed gasoline and other petroleum products exclusively and operated under a private name, and

2. Branded-outlets which were affiliated with an integrated company and generally offered repair services and a variety of automotive accessories to go with their petroleum products.

Each was guided by a different marketing philosophy, with non-branded outlets following a price competitive strategy and branded outlets following a non-price competitive strategy. While non-branded independent outlets have traditionally constituted a small portion of

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*Prorationing laws sought to regulate the amount of gasoline produced each month by 1) restricting overall output and 2) allocating an efficient rate of output for each pool of oil within the state and each well drawing oil from that pool.
all retail outlets, they have had significant impact on marketing and have introduced marketing practices that are becoming more and more popular today.

Non-branded retailers are not attached to companies with sources of crude oil. Generally they are independent jobbers who must search out supplies of wholesale gasoline, often purchasing gasoline from a number of sources, such as independent refiners, integrated companies, and the spot market. Frequently referred to as price discounters, they pioneered high volume, low price marketing and brought the economics of mass merchandising to gasoline retailing. Among the mass merchandising innovations they introduced were self-service stations, multi-pump stations, and large underground storage tanks (42).

The success of these outlets can be traced to their owner's ability to locate low-cost wholesale supplies of gasoline and to their owner's ability to effectively run low unit cost operations which avoided the costs of advertising and credit cards contained in the price of branded gasoline. Through the use of mass merchandising techniques, these outlets were often able to undercut their branded competitors by as much as six cents.

Integrated oil companies, on the other hand, have traditionally eschewed price competition in establishing the price of gasoline sold through branded outlets. Instead, they have relied on such non-price competitive lures as quality of service and product, credit cards, station image, and trading stamps. Indeed an essential element of non-price competition is the marketing strategy of projecting a
favorable brand image through advertising the intrinsic qualities of branded gasoline and the service advantages of branded outlets.

Reliance on non-price competitive practices also points up a major role that the integrated companies saw for their retail outlets; namely to help preserve crude oil profits by stabilizing the gasoline market and market prices. The branded retail outlet's function as a market stabilizer was exemplified by the gasoline wars of the 1950's and 1960's during which the major companies sought to counter the market inroads made by non-branded price competitors. When non-branded markets aggressively undercut the price on branded gasoline in a particular market area, the major companies aided branded outlets in battling the competition through dealer pricing assistance plans and the introduction of sub-regular grades of gasoline (39).

The practice of non-price competition, with its related purposes of guaranteeing crude oil profits through market stabilization, was reflected in another marketing objective -- the goal of expanding market share or coverage. Integrated companies sought to accomplish this goal by building new outlets and encouraging businessmen to lease them or open their own outlets. As a result, many of the integrated companies overbuilt, creating economically marginal outlets in the process.
D. Increasing Dependence On Foreign Oil
And Its Influence On Gasoline Marketing

The crude-oil profitability picture and the marketing structure it shaped began to change in the mid 1960's. With the demand for gasoline outpacing growth in domestic supply, a number of integrated companies were compelled to look to foreign sources for additional supplies. Some of the large integrated companies had significant investments in foreign oil production and continued to derive substantial profits from crude oil production. But others, lacking foreign sources, were forced to purchase imported crude from the internationally integrated firms (15). As a result, they saw their crude oil profits seriously eroded. Their response was to alter their principle refining and marketing objectives from maximizing product sales to optimizing per unit profitability within the refining and marketing components. The shift in emphasis by these companies prompted some integrated marketers to withdraw from 1) markets in which their sales constituted less than 5 percent of market share; 2) markets that were far from the center of their distribution network and thus costly to serve; and 3) markets with low volume, high cost per gallon outlets (15).

At the same time as the new oil production picture was dictating that some companies retrench and eliminate some of their low volume outlets, other economic forces favoring the growth of high volume outlets also emerged. Rising operating costs, including wages, rents,
taxes and equipment, outstripped the growth in gasoline sales, thereby increasing the number of gallons stations had to sell in order to attain a reasonable return on investment. Reflecting the new economic trend, in part, were the changes in dealer margins during the late 1960's and early 1970's. Per gallon margins actually declined in terms of 1968 dollars, despite increasing in terms of absolute dollars. This trend continued through the 1970's.

The new dependence on foreign crude oil and altered marketing economics, both of which brought on a shift in marketing emphasis, set the stage for the profound changes that took place in the 1970's. This in turn contributed to rapid increases in the price of oil as well as to structural changes of the marketing segment of the gasoline industry.

E. The 1970's: An Era Of Government Regulation

A series of price controls, which had either a direct or indirect impact on gasoline marketing, were instituted as part of the Economic Stabilization Program. Starting with the Phase I Controls instituted in August 1971, these various price control programs sought to put a cap on inflationary prices and lasted through 1973. They included the 1) Phase I Controls; 2) Phase II Mandatory Price Controls; 3) Phase III Voluntary Price Standards; 4) Special Rule No. 1, a special mandatory price control on the crude oil and refined petroleum products of firms with annual sales of at least $250 million; 5) Voluntary Petroleum Allocation Program; 6) Price Freeze II; and 7) Phase IV Controls, a comprehensive system for controlling petroleum prices.
These seven programs preceded the Emergency Petroleum Allocation Act (EPAA) enacted in November 1973, with the Phase IV Controls providing the foundation for the price regulations incorporated in the act. As noted earlier, EPAA was instituted to deal with the supply shortages created by the Arab Oil Embargo, preserve competition with the industry, and protect the economic viability of the independent portions of the industry. Besides implementing price controls on gasoline, it established an allocation scheme by which gasoline is distributed to the various components of the distribution network. EPAA forms the basis for the Mandatory Petroleum Allocation and Price Regulations presently in effect.

Declining production profits for the international integrated companies tended to have much the same impact as it did for the primarily domestic firms in the mid 1960's. Many of these firms began to seek profits at the retail level as well (2). The elimination of the oil depletion allowance in May 1975 reinforced this shift by further eroding oil production profits and removing a major incentive for emphasizing volume production. The policy of maximizing volume sales yielded to one directed toward higher profits per sale. No longer was the marketing segment to function principally as a market stabilizer or bulwark for crude oil and refinery profits.

Intimately tied in with the shifts in marketing approach was the rapid increase in gasoline prices that began in 1974. With these increases, motorists became more price conscious and price became the cutting edge of competition; smaller retail outlets unable to meet the
challenge of price competition lost some of their market share to larger volume, lower price outlets. Non-price competitive practices had to be modified in response to changing consumer desires.

As evidence of this, the price differential between company owned branded outlets and non-branded outlets has generally narrowed. In January 1979, the average company owned outlet actually undersold the average non-branded outlet by 0.4 cents a gallon (33).

Further evidence of the change in marketing strategy and the shift toward price competition can be seen in the increasing volume of gasoline marketed through company owned outlets. From July 1975 to July 1979, the average company owned outlet increased its monthly volume of gasoline sales from just under 60 thousand gallons to slightly more than 80 thousand gallons. In this same period, the average independent non-branded outlet increased its volume sales only marginally from 60,186 gallons to 60,756 and the average branded independent's monthly volume sales declined from 32,030 gallons to 31,087 gallons (35).

The structure of the marketing segment has changed vastly since the start of the 1970's; the most significant changes came after 1972 when the number of retail outlets reached a post-World War II high of 226,459. In the seven year period, 1972-1979 the total number of stations dropped nearly 28 percent to 163,228. Table 3 presents the number of retail gasoline outlets by marketing category for the period 1975-1979. As shown in this table, the growth in the number of company owned outlets has fluctuated, from 16,072 outlets in 1975, reaching a peak of 17,291 in 1976 and dropping to 14,328 in 1979. During this
TABLE 3. AVERAGE MONTHLY NUMBER OF GASOLINE RETAIL OUTLETS AND MARKET SHARES BY MARKETING CATEGORY, 1975-1979.*

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>July 1975</td>
<td>190,272</td>
<td>16,072</td>
<td>14.0</td>
<td>10,700</td>
<td>9.1</td>
<td>163,500</td>
<td>76.6</td>
</tr>
<tr>
<td>July 1976</td>
<td>182,191</td>
<td>17,291</td>
<td>16.7</td>
<td>10,900</td>
<td>10.0</td>
<td>154,000</td>
<td>73.3</td>
</tr>
<tr>
<td>July 1977</td>
<td>178,558</td>
<td>16,358</td>
<td>17.1</td>
<td>12,900</td>
<td>11.5</td>
<td>149,300</td>
<td>71.4</td>
</tr>
<tr>
<td>July 1978</td>
<td>177,832</td>
<td>15,632</td>
<td>18.2</td>
<td>15,600</td>
<td>12.1</td>
<td>146,600</td>
<td>69.7</td>
</tr>
<tr>
<td>July 1979</td>
<td>163,228</td>
<td>14,328</td>
<td>18.8</td>
<td>11,900</td>
<td>11.8</td>
<td>137,000</td>
<td>69.4</td>
</tr>
</tbody>
</table>

*No similar breakdown available for earlier years.

period the number of branded gasoline marketers decreased from 163,500 outlets in 1975 to 137,000 outlets in 1979, a 16 percent decline. These statistics clearly indicate the decline in the number of retail outlets in general, with the largest decline experienced by branded independents.

Presented as well in Table 3 are data revealing trends in the market shares captured by the different types of stations. Here too, branded independents have lost ground to refiner-owned and non-branded independent competitors, manifesting a continuous decline in the share of the market they serve. Refiner-marketers, by contrast, have steadily expanded their share of the market, despite fluctuations in the number of outlets they own.

While the information in Table 3 portrays significant aggregate patterns, it fails to draw a clearly focused picture of market trends. The expanded role played by company-owned outlets is not a phenomenon common to all refiner/marketers. As shown in Table 4, of the 28 leading refiners, eight account for most of the increase in refiner operated stations.

An examination of trends in the channels of distribution for the eight refiners (Table 5) also points up how the economic and institutional factors that emerged in the 1970's have affected the retail marketing sector. With price becoming the cutting edge of competition, the branded independent and lessee dealers of the eight refiners, most of whom operate low volume high cost outlets, have been unable to compete effectively and have lost volume to larger outlets
## TABLE 4. WHO ACCOUNTS FOR THE VOLUME INCREASE IN REFINER-OPERATED RETAIL OUTLETS AMONG THE LEADING 28 REFINERS

(gallons of gasoline)

<table>
<thead>
<tr>
<th>Refiners</th>
<th>January 1972</th>
<th>January 1979</th>
<th>Difference</th>
<th>Percentage Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulf</td>
<td>58.3</td>
<td>362.3</td>
<td>304.0</td>
<td>521.4%</td>
</tr>
<tr>
<td>Marathon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clark</td>
<td>25.7</td>
<td>136.8</td>
<td>111.1</td>
<td>432.3</td>
</tr>
<tr>
<td>Sohio-BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citgo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crown</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hess</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>458.0</td>
<td>925.8</td>
<td>467.8</td>
<td>101.1%</td>
</tr>
<tr>
<td>ALL 28 REFINERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Energy Information Administration Form P-306

## TABLE 5 - A COMPARISON OF TRENDS IN CHANNELS OF DISTRIBUTION BETWEEN SELECTED YEARS FOR TWO GROUPS OF REFINERS

(Millions of Gallons)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Co. Store Sales &amp; Comm.</th>
<th>Change from Previous yr.</th>
<th>Dealers Lease &amp; open</th>
<th>Change from Previous yr.</th>
<th>Branded Jobbers</th>
<th>Change from Previous yr.</th>
<th>Non-Branded Jobbers</th>
<th>Change from Previous yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>797.0</td>
<td></td>
<td>7208.4</td>
<td></td>
<td>1423.1</td>
<td></td>
<td>2145.9</td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>1089.6</td>
<td>292.5</td>
<td>7570.5</td>
<td>-362.1</td>
<td>1427.0</td>
<td>3.9</td>
<td>2087.5</td>
<td>-58.6</td>
</tr>
<tr>
<td>1974</td>
<td>1324.2</td>
<td>234.6</td>
<td>6175.6</td>
<td>-1394.9</td>
<td>1079.8</td>
<td>-344.2</td>
<td>2792.3</td>
<td>704.8</td>
</tr>
<tr>
<td>1975</td>
<td>2191.1</td>
<td>866.9</td>
<td>5559.1</td>
<td>-816.5</td>
<td>1380.5</td>
<td>300.7</td>
<td>3120.3</td>
<td>328.0</td>
</tr>
<tr>
<td>1976</td>
<td>3265.1</td>
<td>1074.0</td>
<td>4977.3</td>
<td>-581.8</td>
<td>1497.2</td>
<td>116.7</td>
<td>3541.5</td>
<td>304.2</td>
</tr>
<tr>
<td>1977</td>
<td>3934.0</td>
<td>668.9</td>
<td>4627.6</td>
<td>-349.7</td>
<td>1566.1</td>
<td>68.9</td>
<td>3573.1</td>
<td>58.6</td>
</tr>
<tr>
<td>1978</td>
<td>4345.0</td>
<td>441.0</td>
<td>4647.3</td>
<td>19.7</td>
<td>1691.8</td>
<td>125.7</td>
<td>3965.2</td>
<td>392.1</td>
</tr>
<tr>
<td>1979</td>
<td>4367.3</td>
<td>18.3</td>
<td>4843.2</td>
<td>193.9</td>
<td>1940.4</td>
<td>248.6</td>
<td>4145.2</td>
<td>180.0</td>
</tr>
</tbody>
</table>

| Group A |                      |                          |                      |                          |                 |                          |                       |                          |
| 1972  | 406.5                  |                          | 6000.3               |                          | 2068.7          |                          | 1291.0                |                          |
| 1973  | 527.4                  | 120.9                    | 6155.8               | 155.5                    | 2324.7          | 256.0                    | 1132.5                | -158.5                  |
| 1974  | 607.0                  | 79.6                     | 5852.1               | -303.3                   | 2168.0          | 23.3                     | 1501.3                | 368.8                   |
| 1975  | 694.2                  | 77.2                     | 5176.9               | -635.4                   | 2452.7          | 140.7                    | 1540.4                | 39.1                    |
| 1976  | 781.1                  | 292.9                    | 4891.7               | -185.2                   | 2760.9          | 308.2                    | 1726.6                | 106.0                   |
| 1977  | 1378.4                 | 395.3                    | 4770.9               | -220.8                   | 2674.7          | -82.2                    | 1940.0                | 213.8                   |
| 1978  | 1521.1                 | 142.7                    | 4710.5               | -60.4                    | 2925.1          | 246.7                    | 1995.2                | 55.7                    |
| 1979  | 1510.9                 | -10.2                    | 5689.4               | 21.1                      | 2882.6          | -42.3                    | 2020.4                | 27.2                    |

Group A - Companies include: Gulf, Marathon, Clark, and Sohio
Group B - Companies include: Citgo, Mobil, Crown and Hess.

that operate on low per gallon margins. Their greatest losses occurred between 1974 and 1977, a period of abundant supply; thus, the allocation regulations had little impact on the distribution of gasoline. It is in periods of abundant supply that lower price confers a distinct competitive edge, and that higher priced outlets are apt to lose their share of the market. When supply tightens, the advantage of low price is blunted, since consumers are willing to purchase high priced gasoline rather than run the risk of not having it. With supply tightening in 1978 and 1979 and the regulations guaranteeing supply, for example, the independently owned and lessee branded outlets were able to slow the decline in volume and, in some cases, recoup their losses.

Another major trend emerging out of this period is that retailing has shifted more and more in the direction of high volume outlets of the type owned by non-branded independents and integrated companies and away from the full service outlets of the type commonly operated by branded independents and leeses. This trend is evident in the relative success of non-branded independents and in the proliferation of self-service and split island outlets, both of which are designed to supply high volumes of gasoline. For example, in 1972 it was estimated that the number of self-serve stations accounted for only about six percent of all retail outlets (25). Adequate data on the number of retail outlets by type such as full service, split island, self-service, etc., did not exist until 1976. It is therefore difficult to give a type breakdown prior to this period. Table 6 presents the number of gasoline service stations by type of service for 1976 and
1978. As Table 6 indicates the number of self-serve stations increased from 16,343 in 1976 to 24,250 in 1978. This indicates a jump in the share of retail outlets from 8.8 percent in 1976 to 14.0 percent in 1978. In view of these trends, it appears that retail gasoline marketers in general are adopting the very distribution techniques pioneered by non-branded independents in the 1950's and 1960's, a change which can be directly attributed to the economic and marketing factors coming into play in the 1970's.

What exactly has prompted the shift toward greater refiner participation in the marketing sector and the shift toward high-volume outlets? Both trends are clearly rooted in the economic and institutional factors and the impact these factors have had on the

<table>
<thead>
<tr>
<th>Station Types</th>
<th>1976</th>
<th>1978</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Full Service------------</td>
<td>96,147</td>
<td>51.5%</td>
</tr>
<tr>
<td>Split Island------------</td>
<td>48,521</td>
<td>26.0%</td>
</tr>
<tr>
<td>Self-Service------------</td>
<td>16,343</td>
<td>8.8%</td>
</tr>
<tr>
<td>Convenience Stores-----</td>
<td>8,082</td>
<td>4.3%</td>
</tr>
<tr>
<td>Mini Service------------</td>
<td>11,518</td>
<td>6.2%</td>
</tr>
<tr>
<td>Truck Stop-------------</td>
<td>2,399</td>
<td>1.3%</td>
</tr>
<tr>
<td>Car Wash---------------</td>
<td>3,569</td>
<td>1.9%</td>
</tr>
<tr>
<td>Miscellaneous----------</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>TOTAL</td>
<td>186,579</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

vertically integrated oil companies. Through their control of crude oil production and refining, vertically integrated firms have been the major force guiding the evolution of the marketing sector in the past. Clearly, their response to the economic and institutional factors emerging in the 1970's has been equally instrumental in shaping the structure of today's marketing sector. Declining crude oil profits and stiff price competition have motivated integrated firms to alter their marketing strategy, changing it from one of employing their retail outlets principally to preserve production profits to one of seeking profits at the marketing level as well. With this change has come an emphasis on the high-volume, mass merchandising techniques so common in today's marketing sector.
Market operations, if left uncontrolled or unrestrained, may have the potential to create distributional patterns of income and wealth which may lead to undesirable outcomes when viewed from an overall social welfare perspective. Consequently, some action may be desired by society to promote equality and achieve more beneficial social results. Often, these actions take the form of governmental legislation and specific regulation.

In devising and passing the Emergency petroleum Allocation Act (EPAA) of 1973, Congress was responding to three major and immediate national concerns. The first concern was that price controls, existing and new, could discourage the market from allocating petroleum products to crucial industries and public services. A second concern centered around the voluntary allocation program. Could a voluntary effort prevent severe, inequitable hardships from befalling certain segments of the public and the U.S. economy? And could it ensure survival of the independent sectors of the petroleum industry during a shortage? Finally, the October 1973 Arab Oil Embargo was feared to be more than a temporary situation (38).
From these concerns evolved the four main objectives of the Act, namely to:

1) Meet national priority needs
2) Achieve equitable distribution of petroleum products at equitable prices
3) Maintain market shares
4) Maintain economic efficiency, minimizing the interference with market mechanisms (38).

From the EPAA, enacted November 27, 1973, came the Mandatory Petroleum Allocation Regulations, issued on January 14, 1974. Administered by the Department of Energy's Economic Regulatory Administration, these regulations provided for comprehensive controls for both allocation and prices of petroleum products at virtually all levels of the petroleum industry.

Controls established under these (regulatory) programs were designed to preserve in a shortage situation, to the extent possible, an economically sound and competitive petroleum industry, including the competitive viability of the independent segments of the industry. Other controls implemented as part of these programs contained provisions to assure equitable distribution of refined petroleum products at equitable prices (15).

The EPAA was designed with short-term goals, to relieve the nation of mounting concerns in the fall of 1973 and to prevent immediate hardships. Responding to the critical nature of the times and faced with the normal market forces of supply and demand, coupled with competition and price, Congress acted to ensure satisfactory oil allocation. The Act was constructed with the best of intentions, and was meant to keep participants in their relative market positions until normalcy would return or longer term solutions would be devised.
An Overview Of The Allocation Plan: Part 211

Part 211 - Mandatory Petroleum Allocation Regulations was part of an amendment to revise Chapter II of Title 10 of the Code of Federal Regulations and was meant to give the persons subject to the regulations "a single, readily available source of information as to the rules established to govern this program." Part 211 represents the section designed to control and monitor the equitable distribution of critically short supplies - at equitable prices - of refined petroleum products. This part contains only provisions for allocation; since price regulation is presented in part 212 of the Allocation Program. This study does not examine the pricing regulations.

The overall program structure was originally presented as eleven separate but interdependent parts. Due to the objectives of this study, the major focus of this report is upon those sections of the allocation plan that apply to the production and distribution of motor gasoline. This entails a basic understanding and analysis of the following sections:

**Subpart A.** -- General Provisions: This part applies to the mandatory allocation of crude oil, residual fuel oil and refined petroleum products produced in or imported into the United States.

**Subpart C.** -- Crude Oil and Refinery Yield Control: This subpart provides for the mandatory allocation of all crude oil produced in or imported into the United States (with exceptions and adjustments).

---

**Subpart F. -- Motor Gasoline:** This subpart applies to the mandatory allocation at the wholesale level of all motor gasoline produced or imported into the United States.

**Subpart L. -- General Reporting and Recordkeeping Requirements:** This provides for the general reporting and recordkeeping requirements applicable to this part. (Reporting and recordkeeping requirements that are limited in application to specific products or situations are contained in other appropriate subparts of this part.)

To facilitate a better understanding of the nature and dynamics of these parts of the allocation plan that encompass our study, the following discussion is presented as though the allocation regulations were developed to control and monitor the production and distribution of motor gasoline exclusively. This discussion is purposely tailored for ease of understanding the numerous changes, exceptions, and adjustments. Figure 3 is a simplified pictorial representation of the relationships among the various components of the allocation plan vis-a-vis the environment in which the plan is being implemented.

The discussion is presented in three parts. The first part explains how the available supply of motor gasoline is determined, e.g., what percentage of the total available crude oil supply becomes motor gasoline and how the allocable supply is determined. The second part describes the mechanisms used in the allocation program that control the exchange transactions of motor gasoline at two levels: the refiner-wholesaler, and the wholesaler-retailer level. The third part describes the allocation process and, in particular, the method of determination and application of the allocation fraction.
Figure 3. A Pictorial Representation of the Interaction Among the Various Components of the Allocation Plan.

Subpart C
Crude Oil and Refiner Yield Control

Subpart F
Motor Gasoline Method of Allocation

CRUDE OIL

REFINERY

WHOLESALE DISTRIBUTOR

RETAILER

CONSUMER

211.65 Crude Oil Control

211.71 Refiner Yield Control Program

211.101 Motor Gasoline (wholesale level)

gasoline rationing applies at this level
Specifics of The Allocation Program

Determination Of The Available Supply

The following describes how the amount of allocable supply is determined. The presentation follows the flow of crude oil from initial well-head production, through distribution, to the point of sale to the retail marketer. The important points regarding available supply and allocation of motor gasoline are presented. Detailed presentation has been avoided for clarity and ease of understanding.

Crude Oil Level: Subpart C

At the refiner level, the allocation plan (subpart C - Section 211.65) sets forth the mechanisms by which the total supply of crude oil is allocated among refiners to facilitate equitable distribution of the total supply.

Each refiner estimates its total crude oil supply available for processing into refined products. This is done by summing the estimates of its available domestic and imported crude oil. The summation of these estimates creates the basis for a national refiner supply/capacity ratio calculated by DOE.

The maximum allocable supply of crude oil attributed to any refiner is the lesser of 1) his estimated supply available for the forthcoming quarter, or 2) the amount of crude oil available during the corresponding period of 1973.
Refiner Level: Refiner Yield Control

A refiner is directed to determine what proportion of his raw crude oil can be processed into what amounts of what refined products (as set forth in subpart C- Section 211.71 of the allocation plan).

The refiner yield control program is designed to require refiners to maximize production of aviation fuels, distillate, residual fuels, and petro-chemical feedstocks by reducing the total production of gasoline. The amount of gasoline that can be produced by each refiner is calculated by using the following basic formula:

\[
\text{each refiner can produce a fraction of his total production equal to historical ratio of gasoline produced per barrel of crude run at his refineries during the corresponding quarter of 1972 multiplied by a gasoline production fraction.}
\]

DOE develops the gasoline production fraction based upon refinery production and the actual production required to meet the needs of the various product allocation programs.

The Wholesale Level: Subpart F

The amounts and directions of the allocable supplies of motor gasoline to be distributed to end-users who are bulk-purchasers or wholesale purchasers is controlled by Subpart F - Section 211.101 of the allocation plan.

At the wholesale purchaser level there are three separate "markets" that have been identified within the formulation of the allocation plan. They are 1) priority users, 2) state "set-aside" users, and 3) other end-users who are bulk purchasers or wholesale purchasers.
1) Priority Users: Oil companies are required to provide 100 percent of base period use for the following classes of customers designated as "priority users." Included in this category are users such as:

(a) mission-essential DOD use
(b) agriculture production
(c) emergency services
(d) energy production
(e) sanitation services
(f) telecommunication services
(g) passenger transportation services
(h) cargo freight and mail handling by truck
(i) aviation ground support vehicles and equipment

Oil companies are also required to provide 100 percent of base period use, subject to supplier's allocation fraction, to wholesale users in the following areas:

(i) industrial use
(ii) commercial use
(iii) government use
(iv) social service agency use

2) State set-aside: In addition, each refiner is required by DOE to reserve a "set-aside" of five percent of the motor gasoline it supplies within a state. Thus, these volumes come from the general gasoline supply. The state government, e.g. the governor or the state energy office, has the authority to declare cases as hardships or emergencies in the state. The "state set-aside" volume can also be used to provide gasoline to retailers in areas of shortage.
3) Other wholesale purchasers: After deducting these priority supply requirements from its available supply, the oil company/refiner totals the amount of gasoline it has left for supplying its customers. This represents the company's allocable supply. With this amount, the company attempts to meet its supply obligations. Each refiner/supplier has the following priorities controlling its allocable supplies:

(a) customers' base period gasoline purchases
(b) new customers since the base period, minus lost customers (gas stations or wholesalers who have gone out of business or changed suppliers)
(c) customers assigned by the ERA
(d) increases in the base period volumes to customers who have appealed to the office of Hearings and Appeals for additional amounts
(e) increased amounts to those customers showing specific growth in sales.

**Determination of Demand Obligations**

The formulation by which the individual refiner is to determine the total supply obligations he is responsible for is relatively straightforward.

To calculate the total supply obligations, it is necessary to begin at the retail marketing level, since the supply obligations of the wholesale/reseller, and subsequently the refiner/seller are dependent upon the historical consumption levels at the retail market level.
The individual wholesale supplier determines his allowable supply using the "base period" formulation. The "base period" is the mechanism used in the allocation regulations to establish a uniform basis by which the amount of supply is determined for each retail marketer. The wholesale supplier calculates his current supply obligations according to the summation of his customers', i.e., retail marketers, purchases during an established period of time. This established period of time is known as the base period, and is determined by the Department of Energy. The current base period is November, 1977 through October, 1978. The summation of all his retail outlet obligations represents the wholesalers' supply obligations. "Supplier/Purchaser" relationships are frozen for each month; supply amounts, and thus obligations, change accordingly month by month. A retail purchaser is entitled to receive the same amount he obtained from his supplier during the base period month subject to his supplier's allocation fraction.

A refiner calculates his supply obligations by summing across his wholesale customers' supply obligations. Similarly, the "supplier/purchaser" relationships are frozen. A wholesale purchaser is entitled to receive the same amount he lifted from his refiner/supplier during the base period month subject to his supplier's allocation fraction. Mechanisms are made available within the allocation program to obtain adjustments, exclusions and other forms of changes related to allocation levels.

*The original Base period was the corresponding month of 1972. In February of 1979, the base period was updated to July 1977 through June 1978, and in May of 1979 it was again updated to November 1977 through October 1978.*
The Allocation Fraction

After determining the available supply of motor gasoline a supplier has and, calculating the wholesale purchasers' needs, the oil company then calculates a supply/demand ratio. If the supply obligation results in an amount that exceeds the company's allocable supply, the company announces an allocation fraction of less than one-hundred percent.

Under these circumstances, the DOE regulations require that, when a refiner can only supply customers with a fraction of their total demand, he must supply the same fraction, within major DOE administrative districts (e.g. East Coast) to all classes of customers. The fraction can only vary a total of five percent between all DOE areas. A variation of more than five percent requires prior ERA approval. Thus, each retail marketer is dependent upon his historical supplier for continued supplies.

A company's supply obligation is the total of:

a) Base period sales
b) New Customers - lost customers since base period
c) Increase in base period volumes granted by OHA
d) Assignments by ERA
e) Adjustments (growth, exigent).

Allocation fraction = \( \frac{\text{product available} - \text{state set-aside}}{\text{supply obligations}} \)

Figure 4 presents a flow diagram depicting the determination of allocable supply and supply obligations.
crude oil available to the individual refiner

determination of the amounts of refined products

amount of motor gasoline less priority users and set-asides

motor gasoline available for distribution

Allocable Supply

each retail outlet determines supply needs using "base period" approach

individual wholesale supplier sums supply obligations to retail customers

sum of other wholesale obligations

sum of obligations total wholesale demand

Supply Obligations

If Allocable Supply is less than Supply Obligations

then

Allocation Fraction = Allocable Supply
Supply Obligations

FIGURE 4. FLOW DIAGRAM DEPICTING THE DETERMINATION OF ALLOCABLE SUPPLY AND SUPPLY OBLIGATIONS
CHAPTER V - ISSUE IDENTIFICATION AND ANALYSIS

Research Approach

In view of the constrained supply conditions and the limited character of market competition in the petroleum industry, the imposition of the EPAA and its associated Mandatory Petroleum Allocation Regulations represented yet another factor having impact on the small retailers in the industry. As noted earlier, the allocation regulations raised important questions of the incidence and equity of the impacts of the regulations. The central issue toward which the Institute directed its efforts was in examining these impacts. Two aspects were considered: the nature of the issues (impacts) raised by the regulations, and the scope and character of the impacts. It is on these we focus our attention.

The research approach developed to investigate the impact of the DOE gasoline allocation regulations involved the following steps:

- Review of pertinent literature
- Identification of initial sets of issues in substantive areas
- Review of initial set of issues and recommendations of issues to be assessed
- Develop a format for assessing relevant issues
- Identification of the relevant actors affecting the issues
- Assessment of issues based upon information obtained from the above steps.
Review of literature

A review of existing literature on the economics of gasoline marketing and the influence of the Department of Energy's gasoline allocation plan on the various gasoline marketers was undertaken. This step was necessary to ensure that a full range of issues could be identified and subsequently utilized for screening major issues related to the allocation regulations. This review centered on the identification of the major actors that either affected or were affected by the allocation regulations in some form or another.

Initial Set of Issues

Once the review of literature was completed, the project team concentrated its efforts on clarifying and specifying the initial set of issues. The issues are presented in four substantive areas. It should be noted that several issues were identified in more than one substantive area (e.g. base period allocation as a theoretical and administrative issue). The initial set of issues were then subjected to the test of clarity, consistence, and objectivity through the use of the Issue Identification and Screening Matrix (IISM) developed at IPA. The team reviewed the initial set of issues, using the IISM, with the objective of identifying the issues most pertinent to the following characteristics: efficiency, equity, entry and exit, and property rights (each will be discussed in detail later).
As a result of this review, the following issues were identified and are recommended for further study.

1. As the allocation regulations stand, it is easier to obtain new station allocations from DOE than it is to get a base period allocation revised upwards for a station already operating.

2. The allocation regulations have been amended in such a way as to enable middle marketers (jobbers) to "upward certify" themselves, creating the potential for a reduction in the allocation fraction during periods of constrained supply.

3. The allocation regulations were intended to serve as a policy to handle the nation's short-term energy problem, but have been extended over the past six years. In order to make them adaptable to changing market-conditions, a patchwork of confusing "bandaid" amendments have been continuously appended to them.

4. Jobbers are not required by DOE to downward certify when stations they supply close, thus, allowing them to channel the gasoline to their other outlets.

5. Suppliers are legally obligated to supply their historical customers amounts of gasoline equal to their base period allocations, subject to the allocation fraction.

6. In assigning an allocation to a new station, ERA Regional Offices fail to a) gauge the volume of gasoline that the market area can absorb or b) fully consider the impact that the new station would have on market area competitors.

7. Disparities exist in the way the various DOE-regional offices interpret and implement the allocation regulations.

8. The use of the base period arbitrarily freezes market relationships.

9. The Department of Energy is slow in processing applications thus making it difficult for marketers to respond to a rapidly changing market.

10. Supply obligations tie marketers to specific suppliers and prevent them from obtaining their products from the cheapest source.
11. Neither the national nor the regional DOE offices closely monitor the distribution of motor gasoline, nor have they developed a data base for monitoring these transactions.

The Issue Identification And Screening Matrix

The Issue Identification and Screening Matrix (IISM) is a research tool developed at the Institute of Public Administration to facilitate a coherent and systematic examination of the allocation program and the specific regulations therein. The IISM method is an adaptation of research methodology that the Institute has developed to specifically analyze issues and problems where data limitations hamper a more quantitative analysis. The IISM method, using specified areas of substantive interest, permits the areas to be subjected to analysis and systematic evaluation.

The following discussion presents, (in summary form), the analytical framework and evaluation methodology applied to Part 211 - the Mandatory Petroleum Allocation Regulations. The initial discussion is concerned with the analytical framework used to identify the institutional and organizational areas of concern regarding the allocation program and regulations (including an evaluation of the substantive relevance of each of the issues considered). The second section of the discussion is a description of the final methodology used to complete the analysis and evaluation.
The Analytical Framework

Public policy, reflected in the form of regulatory legislation, is implemented in a multidimensional environment and, consequently, impacts numerous interested parties differently.

As described in the earlier section of this chapter, the mandatory petroleum allocation program entails the complex interactions of many parties associated with the regulations. Starting with this general scenario, the Issue Identification and Screening approach is used to structure the nature and substance of those interactions, and identify and analyze the ways in which the allocation regulations affect the various segments of the petroleum industry.

Figure 5 is a simplified flow diagram of how the allocation program superimposes itself on the institutional/organizational environment of the petroleum industry. As shown in the figure, there are three functional areas of the allocation scheme: a) the theoretical structure of the allocation program, b) the administrative aspects of the allocation program, and c) the industrial aspects that are being monitored and regulated by the allocation program. Correspondingly, there are two primary processes of interaction between these functional areas. They are: (1) the implementation process and (2) the process of compliance.

In the context of the institutional and organizational arrangements and processes described above (and shown in Figure 5) a taxonomy of four broad subject classes was identified:
Figure 5. Flow Diagram showing the linkage between the Attributes of the Allocation Program and the Petroleum Industry
A series of issues were then identified and evaluated for their relevance and importance, and then classified into one or more of the four subject classes. Each issue was then further evaluated in terms of the following characteristics:

- Efficiency considerations
- Equity considerations
- Entry and exit impacts (capabilities)
- Property rights/ownerships

Thus, each issue, once identified as sufficiently important to be placed into one or more of the four broad subject classes, was analyzed in terms of its affects in terms of the four sub-characteristics listed above.

**Substantive Area I: Theoretical Structure**

Theoretical Structure focuses upon the conceptual content of Part 211 of the allocation program. Basically, theoretical structure refers to the conceptual mechanisms and administrative procedures designed to facilitate the achievement of the overall objectives of the allocation program. This includes the control and monitoring of the
production, distribution, and marketing of crude oil and refined petroleum products.

There are two fundamental components in this area. One consists of the theoretical formulations designed to determine the allocable supply and manner by which that supply is distributed among wholesalers, and among retail marketers. The allocation program is based on these formulations to achieve the objectives of promoting an efficient and competitive petroleum industry, while maintaining an equitable distribution of crude oil and refined petroleum products.

The second part concerns the organizational arrangements designed to handle the implementation of the allocation program. Included in this area are the alternative "methods" or "procedures" used to handle day-to-day operations, including exceptions and appeals from the individual marketers, as well as the more encompassing social, economic, and political aspects of the mandatory petroleum allocation program.

The major issues evolving from the theoretical structure area of the allocation program center around the questions of the conceptual nature and structure of the allocation program and the potential (adverse) alterations of the existing/historical environment of the petroleum industry that may occur due to the allocation regulations. Specific issues center around the potential gains that unintended biases in the allocation regulations may present to one interested party over another.
Substantive Area II: Administrative Aspects

Administration encompasses the functional and operational aspects necessary for and associated with the implementation of the allocation program. This focuses upon the operations and procedures designed to coordinate and support the administrative aspects of the allocation regulations. Issues of concern in this substantive area include dissemination and enforcement of the allocation regulations, and the associated documentation needed to implement effective controls as specified by the regulations. Both the areas of administrative actions within and among each of the responsible governmental bodies* are included in the analysis.

The major issues stemming from the administration of the allocation program are directly attributable to the administrative capabilities of the respective governmental bodies responsible for the implementation of the allocation program. This includes the abilities of the responsible bodies to respond to the needs and demands of the interested and participant parties subject to the allocation program.

Substantive Area III - Implementation

This area refers to the process by which the responsible administrative agencies interpret the regulations and subsequently apply and reinforce them. Thus, implementation consists of two major steps: interpretation and application.

*Governmental bodies include DOE, ERA, OHA (both national and regional offices), and the state bodies responsible for the state set-asides, and the judicial court system.
The manner and mechanisms of implementation have extensive and crucial ramifications for the overall effectiveness of the allocation program. The concerns and issues attributable to implementation, both interpretation and application, reflect the potential that exists to alter the present nature and structure of the production, allocation, distribution, and marketing of affected petroleum products. Concern centers around how one interested party achieves, either purposefully or inadvertently, a relative competitive advantage over another.

**Substantive Area IV - Compliance**

Compliance concerns administrative demands and burdens placed upon the participating parties pursuant to the legal requirements of compliance to the allocation program. The difficulty of interpretation, the complicated presentation, the amount and types of obligatory documentation necessary for basic adherence, and the problems associated with changes, adjustments, exclusions, etc., are representative of the concerns related to the area of compliance.

Two basic forms of compliance exist. First, the industry adheres to the intent and design of the regulations as effectively as possible. Those individuals or groups for which the regulations are intended can comply with the general (their own) interpretation of the regulations as presented, in this case, in the Federal Register. This form of compliance, as depicted in Figure 5 by the arrow compliance (I) between Theoretical Structure and the Petroleum Industry, entails primary interpretation of the regulations. Generally, this form of
compliance does not necessitate any extensive interaction between the administrative bodies and concerned parties of the industry.

The second form of compliance is interdependent with implementation and administration. When a controversy exists over the intent or interpretation of a section of the allocation regulations, it is often necessary for the appropriate administrative agency to determine the final ruling. Subsequently, the industry is obligated to comply with the ruling. This form of compliance is depicted on Figure 5 by the arrow compliance (2) between Administration and the Petroleum Industry.

**Characteristics**

Characteristics are used to clarify the validity, applicability, and substance of specific issues. It is not intended that each of the four characteristics is applicable to all of the issues. The characteristics represent the specific criteria of concern regarding the overall objectives of the allocation program; specifically, the regulations. A discussion of each of the four characteristics: (1) efficiency, (2) equity, (3) entry/exit, and (4) property rights, follows.

**Efficiency** refers to the efficiency of an operation or process, defined to be productive of desired results, without waste, as measured by a comparison of production with cost (as in energy, time,
and money). Thus, administrative efficiency can be measured by the time it takes to process a complaint or request, an exception or appeal, etc. Implementation efficiency might be the time, energy, and money needed to alter a faulty regulation; this includes the resources spent by those awaiting the outcome of an administrative decision.

Equity - refers to an evaluation to determine whether any section of the allocation regulations presents a situation whereby it is determined that an interested party is given position to obtain or develop a competitive advantage over another party. Such a competitive advantage may arise due to interpretation, application, monitoring practices, or enforcement policies, and is a relevant factor in each of the four substantive areas described above.

It must be recognized that, to achieve more socially desirable outcomes than may be obtainable by strict adherence to the distribution of resources as determined by the unfettered free market, some regulatory mechanisms may be specifically designed to achieve more equitable allocation objectives. These include the redistribution of income and wealth at all levels of institutional interactions.

It is important to note that the price system can not deal with the problems of equity.

Entry/exit - refers to the ability of a participant party to start-up (enter) or terminate (exit) a business or to complete normal business transactions within a given industry. Ideally, the adoption or implementation of a regulatory mechanism should impose no extraordinary
barriers for new firms to enter or for participatory firms to exit the market. The only barriers faced by new firms should be the same costs of production already faced by existing firms.

Concern regarding the allocation regulations centers around two points: (1) the ability of existing wholesalers and retail marketers to obtain increased supply allocations and (2) the ability of new wholesalers and retail marketers to obtain a new, i.e., original, supply allocation.

**Property Rights** - refers to the legal specifications of who owns what, and what rights an owner has to trade those goods which he owns. There are distributional effects which are dependent upon who is assigned ownership; consequently, allocation will be affected by the way in which property rights are assigned. Additionally, when a regulatory mechanism necessitates the reassignment of the property rights of goods and services in contradiction to the distributional patterns that the unfettered marketplace would create, questions of property rights arise. Because of this, any assessment of the desirability of certain assignments must be made on both economic and equity consideration. This is especially true when exclusions or special cases are approved.

**Specification of Relevant Issues**

Having identified the basic nature of the problem, the research team proceeded in two directions. One was the development of the
research approach, focusing upon the analytical framework; the Issue Identification Screening Matrix. The second was the identification of an initial list of tentative issues of concern or conflict within the allocation regulation. Having completed these two steps, the initial issues were subjected to the first round screening through the IISM. This step enabled the research team to 1) verify the research approach, especially the definitions and applicability of the attributes and characteristics chosen to critique the issues and 2) analyze the validity, applicability, and substance of each issue.

The next step entailed an in-depth development of each issue. This included standardizing and verifying each issue. The development process included:

- in-depth research of documented evidence; historical and current
- interaction(s) with representatives of the interested parties
- contact and exchanges with in-house experts from the relevant governmental agencies
- continuous interaction with the client - The Small Business Administration-on a bi-weekly basis to develop a technically coherent methodology.

At this stage the list of issues were subjected to a second round of screening. The purpose at this point was to eliminate those issues recognized to be invalid or irrelevant to the study, based upon the overall study objectives and specific evaluation criteria. From this process, the final list of eleven issues (presented earlier) was identified. The final list was subjected, once more, to the screening
matrix. This final analysis and evaluation represented the most rigorous testing of the issues vis-a-vis the stated objectives of the study. Through this process the team was able to identify those attributes and characteristics that represent the substance of each respective issue. Figure 6 is an example of the Issue Identification matrix upon completion of our analysis and evaluation. The issues are listed down the left side, numbered according to the listing presented in list of the issues section. Across the top of the matrix are the four substantive areas or attributes supported by the four characteristics respectively. Spaces under each row and column represented by an "X" indicate the areas of concern that the analysis has focused upon.
FIGURE 6. ISSUE IDENTIFICATION MATRIX

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Of the initial set of issues that were identified, eleven were validated and screened, using the Issue Identification and Screening Method, as being the most crucial in terms of affecting the economic viability of the independent gasoline marketer. In this section these eleven issues will be analyzed within the context of the four substantive areas of theoretical, implementation, administration and compliance.

**ISSUE I**

As the allocation regulations stand, it is easier to obtain new station allocations from DOE than it is to get a base period allocation revised upwards for an already existing station.

In order to obtain an allocation assignment for a new station, a Prospective marketer must submit to the appropriate regional office an ERA Form 99, in which he describes the planned outlet, and its location, lists the name(s) of his willing supplier(s), identifies potential aggrieved parties, and justifies the volumes he is requesting. Aside from the length of time that DOE Regional Offices take to process these forms and the impact that the waiting period has in hampering efficient market decisions, new entrants generally have little trouble acquiring allocation assignments. Most applications are approved as long as the applicant has a willing supplier. Even when no willing supplier exists, however, the regional offices are empowered to authorize one.
On the other hand, it is not easy for existing stations seeking additional supplies of gasoline to acquire upward volume adjustments. The application procedure is similar, with the applicant documenting his request on the ERA Form 99. But, the application is processed by the regional branch of the Office of Hearing and Appeals (OHA). Generally referred to as exceptions, upward adjustments have been granted only in instances in which the applicant meets one of the upward adjustment standards covered under:

**The Duncan Principles** which permit upward adjustments in cases in which a firm's current operations differ markedly from its operations during the base period, usually involving a change of ownership that occurred during or immediately after the base period;

**The Anger Principles** which allow upward adjustments in cases in which the firm made a significant investment during or soon after the base period, and thus, could not benefit from the investment until after the base period;

**The Harrison Principles** which permit upward adjustments in situations in which extenuating circumstances took place during the base period -- circumstances that rendered the base period unrepresentative of normal operations;

**The Tidwell Principles** which allow upward adjustments in cases in which the applicant's market area would be forced to endure an inequitable shortage of gasoline unless additional supplies are channeled to it; and

**The Unusual Growth Adjustment Provision** which accompanied the May 1, 1979 base period change and makes firms eligible for upward adjustments if the monthly average volume of gasoline that they purchased between October 1978 and February 1979 exceeded their base period allocation for any base period month by at least 10 percent.

Except for the Tidwell Principles, each set of standards seeks to remedy specific inequities engendered at the time of the imposition of a new base period. None of them allows for exceptions for the purpose of business expansion.
A. Substantive Area - Theoretical

**Efficiency.** The regulations, by limiting the ability of existing marketers to expand their operations but readily allowing new marketers to enter the retailing sector, promote a wasteful allocation of resources in two separate but related ways; both pertain to the ability of the marketing sector to make efficient responses to the current marketing environment. Marketing conditions now favor high volume, low cost outlets. Yet the regulations stymie existing marketers from making efficient responses to these conditions, preventing them in the process from building on the nucleus provided by their facilities. At the same time, they permit new marketers, many of whom plan to operate small, inefficient convenience store outlets, to enter the market without much difficulty. Together, the new station assignment and the upward adjustment policies work to entrench marketers in inefficient marketing positions, while allowing the proliferation of inefficient outlets.

**Equity.** The regulations, in this instance, are inequitable in that they favor new entrants over operating stations. Recognizing that marketing conditions favor high volume stations which operate on small per gallon profit margins, a new marketer can obtain a large volume assignment and compete successfully. Many existing marketers on the other hand, are locked into low base period volumes, and are precluded from undertaking effective responses to market conditions.
Property-Rights. Given that the regulations, as they are implemented, render it virtually impossible for existing marketers to acquire additional product for business expansion purposes, they infringe on the property-rights of stations owners. They have eliminated an important business perogative, a perogative that can be essential to maintaining an outlet's share of the market.

B. Substantive Area - Administration

Efficiency. Processing delays frustrate marketers' efforts at making efficient business decisions. Regional OHA and ERA offices have substantial case backlogs, with OHA offices reporting a nation-wide backlog of over 11 thousand cases. As a result, many marketers, particularly those seeking exceptions, are forced to hold business plans in abeyance, and absorb the costs of delayed decisions.

Equity. Applications for exceptions are scrutinized more closely and judged against far more stringent criteria than applications for new assignments, despite the fact that both are essentially for the same purpose--requests for gasoline. Regional ERA offices generally follow a broadbrush approach in evaluating allocation assignment applications and determining the amount of gasoline assigned to a new outlet. The foremost consideration in the evaluation is whether the applicant has a willing supplier. In processing applications for exceptions, regional OHA offices undertake a more probing examination,
in which each application is evaluated against the more exacting financial hardship and gross inequity criteria described previously.

**Property-Rights.** Delays in the exception review process, not uncommon occurrences, can lead to the demise of a business, not to mention lost business opportunities. Even for those rare cases that qualify for an upward adjustment, processing delays might undermine a business expansion opportunity that a marketer would ordinarily seize.

**Issue II**

The allocation regulations have been amended in such a way as to enable middle marketers to upward certify themselves, creating the potential for a reduction in the allocation fraction during periods of constrained supply.

Section 211.13 (c) of the allocation regulations authorizes automatic upward certification by resellers (wholesalers or jobbers), when they receive orders to supply new allocation assignments. The purpose of the section is to guarantee that new jobber supplied outlets can acquire their gasoline allocations from the ultimate source of supply, the refiners.

Section 211.13 (c), however, also creates a significant option for resellers. Through it, resellers can attract new customers, agree to serve the customers in their capacity as willing suppliers,* and provide the customers with gasoline, without having to draw on their own

* See Issue I for a discussion of new allocation assignments.
supplies; the last step can be done because of the resellers' ability to upward certify. All of this can be accomplished without the authorization of the refiner. Section 211.13 (c), therefore, constitutes an important mechanism through which resellers can expand their businesses.

A. Substantive Area - Theoretical

Efficiency. Section 211.13 (c) provides a strong incentive for resellers to attract new clients to their distribution network, and supply them by simply upward certifying. Often these clients are convenience stores, pop shops, or any of the new types of distributors that have emerged in recent years. Most are small scale marketers, bereft of the efficiencies offered by large scale, gas only outlets.

That the availability of the upward certification option has led to a proliferation of small, jobber-supplied outlets is reflected in data recently compiled by one of the Regional ERA Offices. Of the 423 new retail allocation assignment applications submitted to that office in December 1979 and January 1980, 225, or about 53 percent, came from convenience stores having jobbers as willing suppliers.

Property Rights. Upward certification poses a threat to the availability of supply for those retailers already in the marketplace, particularly during periods of tight supply. When resellers take on new customers and upward certify, they tap the supply pools of the refiners
that serve them, thereby reducing the amount of gasoline available to
the refiners' other customers. In periods of plentiful supply, this has
little, if any, impact on base period customers. Refiners can simply
draw on their surpluses. When a particular refiner's allocation
fraction is at, or below, one (1.0), however, the cumulative effects of
resellers taking on many new customers can produce a significant decline
in the amount of gasoline available to existing retailers.

**Issue III**

The allocation regulations were intended to serve as
a policy to handle the nation's short-term energy
problem, but has been extended over the past six
years. In order to make them adaptable to changing
market conditions, a patchwork of confusing "band
aid" amendments are continuously appended to them.

Most regulations are introduced for purposes of responding to
socioeconomic problems that may result from the imperfections of the
market mechanism. At the time these regulations are devised, it is
extremely difficult to anticipate and accommodate the dynamic changes
that are likely to occur in the market. When the regulations are
extended over a period of time, they are often rendered ineffective by
these changes. At the same time, the regulations inevitably alter the
markets they seek to regulate, spawning unforseen and negative
distortions. Responding to both types of problems, regulatory agencies
strive to make appropriate adjustments, frequently at the prompting of
the various interest groups affected by the regulations. What often
emerges is a patchwork of fragmented amendments, molded more by
political motives than by a comprehensive, analytic regulatory approach.
The Mandatory Petroleum Allocation Regulations have been plagued by many of these same problems. Designed to attack the short-term shortage problems created by the 1973 OPEC oil embargo, they have been extended well beyond that shortage period and were extended during a gasoline surplus period that followed. Throughout the six years that the regulations have been in effect, countless changes have been made to them, all intended to keep the regulations up to date and responsive to changing market conditions. An independent study prepared for the American Petroleum Institute, for example, estimated that over 200 major price and allocation changes have been made since the Cost of Living Council reimposed controls on petroleum products (13). Of these changes, nearly 40 directly affected the allocation of motor gasoline; many of them were needed to rectify the negative impacts of other regulatory provisions.

A. Substantive Area - Theoretical

Efficiency. Extending the regulations beyond the original shortage situation and tacking-on countless adjustments to keep them up-to-date have had impacts on the market, all of which undermine market efficiency in that they distort supply-demand relationships. First, extension of the regulations distorts distribution methods and marketing patterns, which were shaped by past market conditions and have little relevance to current growth, distribution, and life-style trends. As a
result, the market's ability to respond to and accommodate change, which is crucial for an efficiently operating market, is seriously constrained.

Second, the prospect of adjustments introduces a new factor into the market, a factor that has little relationship to market needs. Anticipating regulatory adjustments that can profoundly influence marketing positions, marketers ignore market signals that would ordinarily dictate their activities. Rather, they tailor their marketing strategies to respond to the expected adjustments. For example, in anticipation of the 1978 base period change, many firms purchased higher volumes of gasoline than they needed in order to guarantee their continued access to large volumes of supply.

**Equity.** Each regulatory change alters some market relationships and works to maintain others. Marketers in favorable positions at the time of a regulatory adjustment may be deprived of advantages gained through prescient and creative business decisions.

The equity issues surrounding regulatory changes go beyond questions of who is and who is not in favorable positions at the time changes are made. They touch on questions of political power and influence, as well. Many regulatory adjustments come at the prompting of specific segments of the regulated industry. Thus, those groups within the industry most able to mount a campaign to modify the regulations often exert the greatest influence over the direction of regulatory change.
Issue IV

Jobbers are not required by DOE to downward certify when stations they supply close, thus allowing them to channel the gasoline to their outlets.

When a jobber-supplied station closes, the jobber is obligated, under the regulations, to inform the regional ERA office that the station has closed. Depending on whether the jobber owns or simply supplies the station, the regional office rules on how the jobber must dispense with the freed product. If the jobber owns the station and seeks to transfer the entire supply to another of his stations, the regional office generally sanctions the transfer, so long as the station is within the closed station's market area. Lacking a station within the market area, the jobber is ordinarily directed to distribute gasoline proportionally among the outlets he serves, including the stations he supplies. A similar arrangement is usually mandated for cases in which the closed station was independently owned but jobber supplied. If the station owner does not own another station within the market area, the product is disseminated among the jobbers' stations and customers.

There are two aspects to the downward certification issue:

1. The ability of jobbers to retain the gasoline of closed stations and divert it to their own stations, an option which derives from the fact that jobbers do not have to relinquish the supply and from the dual function that jobbers have as wholesaler-retailers; and

2. The ability of jobbers to garner more than their mandated share of the "freed" gasoline, an ability that stems from DOE's difficulties in monitoring marketing activities.
B. Substantive Area - Implementation

Efficiency. Frequent and numerous amendments to and reinterpretations of the regulations can create intractable implementation difficulties, seriously complicating implementation. DOE officials and their staffs have considerable difficulty keeping abreast of all the changes.

Equity. The regulations are applied through a decentralized system, with implementation responsibilities divided among ten regional offices. Disparities in the way the regulations are implemented by these offices are magnified by frequent regulatory adjustments—adjustments which add to the complexity of the regulations. As a consequence, the prospect that refiners, marketers and wholesalers in different regions will be treated differently is enhanced.

C. Substantive Area - Administration

Efficiency. Saddled with having to apply a growing number of regulations that are becoming more and more complex, DOE personnel are faced with an ever increasing administrative burden. Combined with staff shortages, this has slowed processing times and created significant backlogs.
A. Substantive Area - Theoretical

Equity. The ease at which jobbers are able to acquire the gasoline of closed stations they once supplied raises two equity issues. One of these issues has equity implications for the competitive structure of the marketing sector. The other has implications for the consumer's access to gasoline.

The competitive structure issue relates to the competitive advantages conferred to jobbers by not having to downward certify, and thus, having access to additional gasoline supplies. With these supplies, jobbers are able to create large, high volume stations, without having to go through the protracted and largely futile exceptions process.

Refiner/marketers and independent station owners simply do not have the same opportunity. Unlike most jobbers, they are considered marketers and marketers alone. When one of their stations closes, they can retain the supply only if they operate another station within the closed station's marketing area. Otherwise, the closed station's supply reverts back to a general pool. For refiner marketers, that means that the product returns to the refiner's pool, from which the refiner's customers acquire their supplies. For most independents, it means the

* While the term independent station owner, here, refers to owners who are not jobbers, it is important to recognize that many jobbers are also independent stations owners, a fact which permits them to apply for the additional supplies of closed stations as either jobbers or station owners.
product goes back to the jobber supplying them; in cases in which the independent is supplied directly by a refiner, the supply goes back into the refiner's pool.

Along with creating competitive inequities, the current method of distributing the gasoline freed by station closings also promotes an inequitable distribution of supply for consumers and could lead to a reduction in the supply available for areas unable to support high volume outlets. The current redistribution method does not guarantee that even some of the freed product remains in the market area, other than permitting an owner to transfer the station's allocated supply to another of his stations within the market area. With the economic incentives for using the gasoline to augment the supplies of high demand stations, and the difficulties that DOE has in monitoring market transactions (see Administration and Compliance sections below), it is likely that low demand areas lose supply to high demand areas.

Property Rights: Jobbers are able to retain a portion of their own closed station's supplies and even appropriate a portion of the gasoline of their former customers. Refiner/marketers and independent marketers, by contrast, must relinquish the gasoline from their closed outlets, if they do not have another station within the closed station's marketing area.
B. **Substantive Area - Administrative**

**Efficiency.** Monitoring wholesale sector transactions is far more difficult than keeping track of refiner or marketer transactions; in fact, little precise data exists as to the number of jobbers in the market, with current estimates ranging anywhere between 12 and 18 thousand. That DOE has difficulty in monitoring the wholesale market was underscored in several interviews with agency officials. Inasmuch as the current redistribution method accords jobbers a greater opportunity to acquire the gasoline of closed stations, it tends to magnify oversight problems, further frustrating efforts to keep tabs on motor gasoline distribution and trends within the marketing sector.

**Equity.** In a sense, the current redistribution guidelines constitute a loophole that favors jobbers over other marketing competitors, a loophole that jobbers can exploit for their own benefit.

C. **Substantive Area - Compliance**

**Equity.** Despite the redistribution guidelines, reallocation of the gasoline of closed stations poses a serious compliance problem for DOE. Not only is overseeing wholesale transactions difficult, but enforcement of the guidelines is contingent on jobbers reporting that the stations they supply plan to close. A significant opportunity,
therefore, exists for jobbers to channel the gasoline to their own outlets, or, even, to the highly profitable spot market, without notifying DOE of station closings. With today's marketing economics favoring high-volume outlets, moreover, jobbers have a strong incentive to close their low volume outlets and transfer the gasoline to their higher volume stations.

**Issue V**

Suppliers are legally obligated to supply their historical customers amounts of gasoline equal to each customer's base period allocation, subject to the allocation fraction.

The Emergency Petroleum Allocation Act (EPAA) and the regulations coming out of it are premised on the assumption that the competitive structure of the petroleum industry and its marketing sector works to prevent an equitable distribution of gasoline in periods of tight supply. Particularly vulnerable to conditions of diminished supply are independent marketers, who do not control their supply sources. Lacking their own sources of product, many of these marketers could be faced with product cut-offs that would threaten their very existence.

In an effort to counteract possible distributional inequities, the regulations have largely eliminated the supplier's discretion in dictating where gasoline is distributed. This is accomplished through
the establishment of supply obligations which require suppliers first to offer gasoline to their historic customers.*

What the regulations have done by mandating supply obligations is to freeze supplier/purchaser relationships and perpetuate them. In this way, they function to guarantee independent marketers continued access to supply, despite changes in either supply conditions, or the business policies of their suppliers.

A. Substantive Area - Theoretical

**Efficiency.** Economic efficiency in the marketplace is rooted in dynamic market interactions, in which suppliers and purchasers are constantly adjusting to new market demands and costs. For refiners, their efficiency rests on being able to 1) serve customers and market areas, without having to absorb excessive distribution and transaction costs, and 2) enter into beneficial long-term and short-term contracts that satisfy both their needs and the needs of purchasers. When it becomes inefficient for them to supply certain markets, they withdraw from them and channel the product to other market areas.

* Historic customers and the amount of gasoline they are entitled to receive are established through the use of a base period as a benchmark for market relationships.
With the regulations mandating supply obligations, the ability of refiners to make efficient distribution decisions is seriously constrained. No longer are they able to enter or withdraw from markets for economic efficiency reasons, or engage in contracts based on the emerging demands and needs of the market place. Instead, refiners are compelled to meet the demands of their historic (base period) customers first, despite the fact that many of the obligations represent one-time sales that happened to have been made in the base period, involve excessive costs, and could be fulfilled more efficiently by another refiner.

Entry-Exit. Supply obligations can prevent refiners from entering markets that they can supply efficiently, while stymieing them from exiting from markets that they can not serve efficiently. Saddled with supply obligations in a particular region, for example, a refiner does not have the option of terminating his supply obligations and transferring his gasoline to another market area that he could supply more efficiently. The inefficiencies of supplying the region, notwithstanding, he is bound, under the regulations, to serve his base period customers.
Issue VI

In assigning an allocation to a new station, ERA Regional Offices fail to a) gauge the volume of gasoline that the market can absorb or b) fully consider the impact that the new station would have on market area competitors.

ERA Regional Offices generally determine the amount of gasoline assigned to a new station through a two-step, comparative evaluation process, in which the proposed station is 1) compared with an existing outlet of a similar character* and 2) assigned an allocation equivalent to that received by the existing outlet. For the comparison, regional office personnel seek a comparable outlet operating within the proposed station's market area. When none exists, they use a comparable outlet in the nearest similar area.

Existing, as well, are other assignment guidelines which specify that the Regional ERA consider the Emergency Petroleum Allocation Act's goals of preserving an economically sound and competitive petroleum industry, guaranteeing the competitive viability of independent marketers, and minimizing economic distortions. But, these guidelines constitute only broad directives. Rarely are they applied in the evaluation process,* a task which would require that regional offices undertake market analyses and use the analyses as the basis for a determination. The tendency is for regional offices to employ the more clearly articulated assignment criteria.

* Character refers to the number of pumps the station will have and the stations operating characteristics; for example a 15 pump, self serve outlet.
A. Substantive Area - Theoretical

**Efficiency.** Commonly used allocation assignment practices foster an inefficient allocation of resources, inasmuch as no attempt is made to gauge the volume of gasoline that the market area can absorb. Under free market conditions, market area demand dictates the amount of gasoline available for sale in a particular market area. When supply exceeds demand in a market area, market forces work to re-establish an equilibrium between supply and demand; prices may be lowered to increase demand, or gasoline supplies may be reduced to accord more closely with area demand.

The fallacy of viewing gasoline as a purely free market good, notwithstanding, the comparative evaluation approach followed in determining allocation assignments does not take into account existing supply-demand relationships. As a consequence, the prospects for supply-demand imbalances are enhanced. That is not to say that these imbalances will go uncorrected. Equilibrium may be restored, but usually at some additional cost to consumers, who are compelled to travel outside their market area for gasoline.

**Equity.** The comparative evaluation approach implicitly favors new stations over existing stations, providing new entrants with an opportunity to gain a distinct advantage in competing for market area demand. A new entrant is able to acquire larger volumes than his competitors. He can then operate on lower margins and undercut area
rivals, most of whom labor under the constraints of their 1977-78 base period allocations, and have virtually no opportunity for expansion.

**Entry-Exit.** Application of the comparative evaluation criteria, alone, permits relatively unfettered entry into the market, often to the detriment of existing outlets. Large volume outlets are encouraged to enter, without having to fear stiff price competition from many of the outlets already in operation.

B. **Substantive Area - Administration**

**Equity.** Regional ERA offices do not have large enough staff to monitor thoroughly requests for new allocation assignments. Rarely, if ever, do office personnel conduct field studies, either before or after the application is approved.* Instead, most regional offices rely on "aggrieved party" questionnaires circulated among market area competitors. What this does is shift the monitoring and compliance burden to prospective competitors. The questionnaire, although not complex, requires that the aggrieved party make several sophisticated determinations in support of a grievance -- determinations that are well beyond the ability of many marketers. These include a) documenting whether trade area gasoline demand can be satisfied by existing stations, and b) furnishing "detailed, factual data and information" to buttress claims that the new station would adversely affect the aggrieved party's business.

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* Of the four regional offices visited during the course of this study only one has a policy of visiting proposed station sites and conducting field work investigations.
In sharp contrast to ERA's investigations of new assignments is OHA's more rigorous investigation of upward adjustment requests submitted by the owners of existing outlets. An applicant requesting an exception for reasons of financial hardship, for example, must submit a detailed financial statement documenting his need and showing that additional supplies are vital to the survival of his business. Here, the burden of proof clearly lies with the applicant, not the applicant's competitors.

Issue VII

Disparities exist in the way the various DOE Regional Offices interpret and implement the allocation regulations.

Consistency is the keystone of a successfully operating regulatory system. Without uniform interpretation and implementation, the allocation regulations can not work effectively. Not only can inconsistent application of the regulations create administrative problems, but it can also promote inequities among the parties the regulations seek to control.

Since the Allocation Regulations are implemented through a decentralized network of ten regional offices, the potential exists for disparities in the way these Regulations are interpreted and applied. Aware of this potential, IPA explored how the regulations are applied at

* A General Accounting Office report on the Gasoline Allocation Program, issued after the completion of the final draft of this study, supports this argument (40). The report points out that DOE regional offices have not implemented sufficient verification procedures, alluding to the inadequacy of relying on aggrieved party notices for verification.
the regional level, with the purpose of delineating differences in approach. The chief difference identified relates to the method used in evaluating applications for new allocation assignments. Of the four regional offices studied, three rely strictly on the comparative evaluation approach. This approach, as described in Issue VI, involved
1) comparing a prospective station with an existing outlet of similar size and nature, and 2) granting the prospective station an allocation equivalent to that received by the existing station. Only one regional office goes beyond the comparative evaluation approach and seeks to consider the impact that a new station would have on the competitive viability of independent marketers. An integral part of that office's approach is regular site visits, a task rarely undertaken by other regional offices. As a result, the office often assigns new station allocations below the amounts that would be granted if the comparative evaluation approach was used alone.

A. Substantive Area - Implementation

Equity. The two allocation assignment approaches have markedly different impacts on the retailing sector and particularly small, low-volume marketers. The comparative evaluation approach, the more commonly applied and the narrower of the two, does not take into account the impact of new stations on existing marketers. Proposed outlets are routinely granted large volumes of gasoline, thereby permitting them to have a competitive advantage over existing, smaller competitors.
Under the broader approach, low-volume outlets are not placed in quite so poor a competitive position. An effort is made to gauge both the market's ability to absorb additional volumes of gasoline and the impact that new stations would have on existing marketers. Implicit in this approach is the fact that existing marketers are operating under previously established base period volumes, and have virtually no chance of expanding their operations.

Property-Rights. Neither approach guarantees that low-volume outlets will not have their share of the market eroded by the introduction of new high-volume outlets. But, when the comparative evaluation approach is used alone, the likelihood that low-volume outlets will suffer loses is enhanced; in a sense, it paves the way for marketing inroads by high-volume marketers.

B. Substantive Area - Administration

Efficiency. Differences in implementation can create intractable administrative problems and render the entire system vulnerable to appeals. For example, an allocation assignment applicant could contest an assignment made under the broader assignment approach on the ground of discrimination, claiming that the comparative evaluation approach is the more commonly used method.
The use of the base period arbitrarily freezes market relationship.

The base period is a mechanism through which supplier/purchaser relationships are established and perpetuated under the regulatory system. Originally delineated as the entire year of 1972, the base period is a benchmark employed to freeze market relationships and, in this way, guarantee that purchasers continue to have the option of buying gasoline. For example, a retailer, who purchased 30 thousand gallons of gasoline from a refiner in August of the base year, is entitled to the same amount of gasoline, from that same refiner, in August of every year that the regulations are in effect. Even in cases, in which purchasers refrain from buying from their base period suppliers, base period obligations remain intact.

The original 1972 base period was selected because it represented the last year that the market operated unfettered by supply shortages. To mirror more closely current marketing conditions, it has since been updated twice, with the most recent update shifting the base period to November 1977 through October 1978. Thus, current market interactions are dictated by the supplier/purchaser relationships in effect at the time of the new base period, many of which were shaped by the imposition of the original 1972 base period.
A. Substantive Area - Theoretical

**Efficiency.** The use of a base period rigidifies ordinarily dynamic market interactions, undermining market efficiency and impeding the evolution toward more efficient distribution methods. It has much the same impact as supply obligations; the base period being the mechanism through which these obligations are established. Base period relationships reflect the distribution and consumption patterns that were appropriate for one specific period—the base year. When a specific base period is extended beyond that year, these patterns become entrenched, despite the fact that they no longer correspond to consumer needs or new distribution approaches. Updating the base period does not necessarily mean that new marketing realities will be incorporated into the regulatory system. Rather, it only means that the realities of a market already molded by the regulations will be put into effect.

At the same time, it is important to realize that the extent to which the imposition of a base period and supply obligations impinges upon market efficiency varies with supply conditions. When surplus supply exist, as was the case between 1974 and 1978, the market functions relatively unfettered by controls. Aware of the abundance of gasoline, purchasers are more willing to play the market, without fearing supply cut-offs. But, when supply tightens, they are less willing to relinquish the guaranteed supply available through their base period suppliers.
Equity. Here too, the impacts are very much similar to those engendered by supply obligations. Employing a base period, as the guiding benchmark for market relationships, locks marketers into the positions they held during the base year. For those in unfavorable supply-relationships, the perpetuation of that relationship stands as an obstacle to competing effectively; for example, marketers tied to high priced suppliers must continue to labor under the disadvantages of high prices, and marketers tied to low base period volumes are forced to operate on low volumes, with little chance for expansion. Marketers in favorable positions by contrast, continue to enjoy the advantages, all the while buffered against having to vie with others for their supply opportunities.

Entry-Exit. Employment of a base period limits entry into marketing, and protects inefficient marketers from having to exit from the market. Lacking a base period supplier, many prospective entrants are hampered from entering the market, although ERA's allocation assignment policies permit relatively easy entry. Yet, inefficient marketers can continue to operate, largely by virtue of their established access to supply sources.

Property-Rights. The use of a base period for the purpose of establishing and maintaining supplier/purchaser relationships infringes on the property-rights of suppliers. It is a mechanism employed to dictate to whom suppliers can sell their property.
B. Substantive Area - Administration

Equity. The relative ease at which a prospective marketer can obtain a new allocation assignment was pointed out previously. Through this process, prospective marketers, in essence, establish new base period relationships, generally acquiring allocation assignments sufficient enough to meet their marketing needs. But, what about existing marketers governed by previously established base period relationships and saddled with unrealistically low volume allocation assignments? Relegated to seeking redress through the long and generally fruitless exception process, these marketers simply do not have as good an opportunity for acquiring the volumes needed to compete effectively. Thus, DOE administrative procedures are clearly weighted in favor of new entrants.

C. Substantive Area - Compliance

Equity. Once a base period relationship has been forged, the responsibility for guaranteeing that the relationship is adhered to lies largely with the supplier and purchaser. The system is essentially a self-monitoring one, in which suppliers oversee purchasers, purchasers oversee suppliers, and the ERA arbitrates disputes between the two.

Where this self-monitoring system breaks down is when the ultimate purchasers, retailers, receive gasoline through jobbers. Often, this arrangement allows jobbers to escape oversight and
capitalize on their dual role as both, purchaser and supplier. When a
jobber-supplied outlet exits from the market, a gap is created in the
monitoring chain. The jobber can continue to acquire the same volume of
gasoline from his established base period supplier and distribute it
among his own outlets, without fear of being monitored. No other member
of the distribution network can so easily avoid oversight.

**Issue IX**

The Department of Energy is slow in processing
applications, thus making it difficult for
marketers to respond to a rapidly changing
market.

For marketers to make timely adjustments to changing market
conditions, it is essential that DOE offices execute their regulatory
responsibilities quickly. The length of time that DOE offices take to
process forms and issue decisions has a direct bearing on market
efficiency. Slow response frustrates efficient market decisions, and
forces marketers to hold their business plans in abeyance, often at the
risk of forfeiting business opportunities.

At the heart of this issue is the ability of DOE regional
offices to process the two most common types of applications, both of
which are submitted on the ERA Form 99: 1) applications requesting new
station allocation assignments; and 2) applications for upward
adjustments, generally referred to as exceptions. The former are
handled by regional ERA offices, while the latter are processed by
Regional OHA offices. Clearly, the ability of these offices to handle
the mission of processing both types of applications is a function of the number of applications submitted, staff size, and such intangibles as managerial expertise and staff morale.

A. Substantive Area - Implementation

Efficiency. ERA and OHA Regional Offices report substantial application backlogs and processing delays, with OHA estimating its national backlog on exceptions at approximately 11 thousand cases.* One ERA regional director estimated his office's turn-around time on new station allocation applications at about six months. Given that market efficiency depends on dynamic interactions and adjustments, the implementation of the regulations has undermined this. Processing delays hamper effective decision-making, and prevent marketers from undertaking responses focused at adapting to emerging marketing conditions.

Equity. Processing delays have equity impacts as well. When paper work demands are heavy, office personnel find it difficult to evaluate each application thoroughly. Instead application must be processed summarily, without a probing examination. With the heavy administrative burdens facing Regional ERA offices, for example, it is not surprising that many of these offices refrain from applying the more

*This number was reported by the National OHA as of February 1980.
complex market impact criteria when examining applications for new allocation assignments. Frequently, this results in new, high-volume outlets being allowed into a trade zone, despite the fact that they will have a severe, negative impact on existing low-volume outlets.

**Entry-Exit.** Market entry is already inhibited by having to seek administrative approval. Processing delays exacerbate entry difficulties. Forced to endure delays, a prospective marketer might find that a business opportunity has been eliminated by changing economic conditions.

B. **Substantive Area - Administration**

**Efficiency.** Efficient administration depends on two important organizational ingredients: 1) sufficient manpower, and 2) committed personnel. IPA's field work and discussions with DOE officials in Washington revealed that DOE has problems with both.

The fact that DOE Regional Offices do not have sufficient manpower to discharge administrative responsibilities is pointed-up by their heavy case backlogs. Since the regulations were implemented in 1974, regional offices staff have been reduced substantially. These cutbacks were made in response to diminished administrative needs, as supply conditions loosened; administrative demands tend to correspond to supply conditions, with tight supply conditions spurring an increase in applications for allocation assignments and exceptions. Left with
depleted staffs, some Regional Offices have even been compelled to rely on contractors to handle the flood of applications submitted on the heels of the recent tightening of supply.

That DOE personnel might have difficulties in being committed to implementing the regulations emerged from discussions with DOE officials in Washington and in the field. Several officials voiced the opinion that DOE no longer supports the regulations and favors their removal. While it is difficult to discern whether this attitude pervades the entire department, one cannot help but believe that it has filtered down to other DOE employees and undermined their commitment to implementing the regulations.

Issue X

Supply obligations tie marketers to specific suppliers and prevent them from obtaining their products from the cheapest source.

This issue, like issue V, centers on the establishment of supply obligations. But it focuses on the impacts of supply obligations from the perspective of the marketing sector, rather than suppliers. In much the same way that the establishment of supply obligations constrains refiners, it limits the discretion of many purchasers in searching out new suppliers. At the same time, however, it also guarantees gasoline supplies to all stations having a base period supplier.
A. Substantive Area - Theoretical

Efficiency. As noted previously, efficiency in the marketplace is the result of a continuing and dynamic process. Unfettered by controls, a competitive industry is constantly evolving toward more efficient forms of production and service delivery that accommodate both the changing needs of consumers and changing economic conditions. For gasoline marketers, this evolution is contingent on having several options. Among them are the ability to: 1) bargain for different volumes of gasoline, depending on product costs and perceived demand; 2) expand to meet the challenges of business opportunities; 3) adjust to changing marketing economies; and 4) adopt innovative marketing techniques. When these options are available, they work together to permit new and innovative marketers to enter the market, allow existing marketers to make efficient adjustments to changing market conditions, and force inefficient marketers to exit from the market place.

In mandating supply obligations, the regulations have limited these options, and have had the two-fold impact of slowing the evolution toward more efficient, high volume marketing techniques, and helping to guarantee the survival of inefficient marketers. With the regulations rigidifying supplier/purchaser relationships, most suppliers are obligated to base period customers. One consequence of this is that many independent marketers have lost the ability to search for cheaper sources and additional supplies, and to bargain for supply. More important, existing stations are foreclosed from acquiring more than...
their base period volumes. Thus, they are prevented from obtaining the high volumes of gasoline so essential for the purposes of adopting innovative mass merchandising methods and competing effectively in today's price conscious market.

Supply obligations, besides restricting the ability of existing marketers to respond efficiently to market demands, also work to shield inefficient marketers from market forces and help them to survive, despite their inefficiencies. The extent to which the right to supply protects inefficient marketers varies, depending on two factors: 1) gasoline supply conditions, and 2) the supplier/purchaser relationship.

In supply shortage period, inefficient marketers can achieve the maximum allowable per gallon profit margins, without undermining their competitiveness; inefficiencies are masked by the lack of supply of a good, for which demand is relatively inelastic. Their competitive viability is founded purely on guaranteed supply. Surplus conditions, by contrast, put a premium on price competitiveness and efficiency. With supply plentiful, the advantages of guaranteed access to supply are dampened. Inefficient marketers are compelled to operate on more competitive margins and absorb the costs of their inefficiencies.

Also providing a buffer for inefficient operations is the access that some marketers have to low-priced suppliers. Marketers served by low-priced suppliers can compensate for inefficiencies and remain in the market simply by virtue of having access to cheap supplies. Under the regulations, moreover, beneficial relationships of this type are perpetuated, furnishing a purchaser with a continuing advantage.
Supply obligations handicap and lock marketers in unfavorable supply relationships. At the same time, they arbitrarily solidify the positions of those marketers in favorable supply positions. Tied to a low-priced supplier, a marketer can benefit from the relationship without having to vie with other marketers for supply. Many survive and prosper by virtue of having access to cheap supply, not by virtue of efficient marketing practices.

Entry-Exit. Entry-exit impacts are intimately tied in with the impact on marketing efficiency. With guaranteed access to supply, existing marketers are relieved of having to meet the economic demands of an uncontrolled market. In fact, the survival of inefficient marketers rests on access to supply, not efficiency.

Issue XI

Neither the national nor the regional DOE offices closely monitor the distribution of motor gasoline, nor have they developed a data base for monitoring these transactions.

For any regulatory system to work effectively, it is vitally important that the implementing agency monitor the system closely, a task which requires that the agency compile data about system operations and their impacts. Lacking appropriate data, the agency will have difficulty in knowing whether the regulations are affecting the various parties that it seeks to control.

How has DOE endeavored to gather information on market transactions and monitor the motor gasoline distribution network?
The agency's data collection efforts have focused on:

i) monitoring changes in the aggregate market shares of motor gasoline retailers, through a survey of retail outlets conducted by the Bureau of the Census; and

ii) monitoring the national sales distribution of refined products to ultimate consumers and independent marketers, through a survey conducted by DOE itself.

The findings of both surveys appear in separate editions of Petroleum Market Shares, a monthly publication issued by the Energy Information Administration. Little attempt, however, has been made to compile information beyond these aggregated levels. Neither the national nor regional offices have sought to build a data base which includes such pertinent information as the kinds of outlets entering the market and who supplies them, and the types of marketers seeking upward allocation adjustments.

A. Substantive Area - Theoretical

Equity. Lack of information stands as a major obstacle to devising effective and equitable regulations. Without information about marketing trends and regulatory impacts, regulatory policy is apt to be shaped more by political pressures than empirical evidence. The upshot of this is that groups possessing the greatest political clout are likely to exert the greatest influence over policy decisions.
B. Substantive Area - Compliance

Equity. No regulatory system, no matter how well-conceived, can function effectively if parties that it seeks to control can evade regulatory oversight. When one of the parties is able to circumvent the regulations, it can gain an advantage over its competitors. Often the party can solidify the advantage, despite the presence of regulatory proscriptions on its activities. The success of the allocation regulations, therefore, rests squarely on DOE's ability to guarantee compliance with them. Its information and monitoring deficiencies, however, create significant enforcement problems. Difficulties in keeping tabs on wholesalers, for example, has allowed some jobbers to appropriate the gasoline of closed stations and divert it to their own outlets.
CHAPTER VI

SUMMARY AND CONCLUSION

An analysis of the Department of Energy's Fuel Allocation Plan was performed in this study. Through a review of available literature, interaction with DOE personnel at both the national and regional levels, and a series of meetings and discussions with the representatives of the gasoline industry, the DOE gasoline allocation plan and its impact on the economic viability of the independent gasoline retailer was examined.

An issue identification and screening method was developed to accomplish the major objective of evaluating the impact of the Department of Energy's fuel allocation plan on independent gasoline marketers in terms of:

a) Efficiency impacts, including restrictions of exit and entry into the retail activity as well as discriminatory behaviors that may cause anti-competitive situations.

b) Equity impacts, including the effects of size and power that could lead to circumvention and abuse of the regulations as well as abuses to the property rights of the independent retailer.

To clearly understand the workings of the allocation regulations and how they relate to the industry that they regulate, an historical and institutional analysis of the gasoline industry was performed and the Department of Energy's allocation regulations were specified.

Several conclusions can be drawn from this study regarding the allocation regulations and their impacts on independent gasoline retailer.
I. The economics of crude oil production and gasoline marketing have changed vastly over the course of the past decade, altering the structure and marketing practices of the retail sector. These changes have prompted stiffer price competition at the retail level, and favored the evolution toward and the proliferation of more efficient, high-volume retail outlets. As a result, many small, low-volume independent dealers have fallen by the wayside, having found it increasingly difficult to compete successfully in today's market.

While this study has not been directed toward exploring the widely held belief that the major oil companies have mounted a campaign to dominate the marketing sector, it is clear that economic forces have created a strong incentive for them to expand their involvement in retail marketing. The marketing sector, once perceived by vertically integrated companies as a segment of the industry that functioned to safeguard crude oil profits, has more and more come to be seen as a level of the industry where profits can be earned. How or whether this perception has been translated into the marketing strategies of these firms is difficult to say. But, one cannot escape the fact that, with their control of crude oil and their dominant position in the industry, vertically integrated firms are uniquely endowed to respond to and seize the profit opportunities available in marketing.

It is also important to recognize that other members of the distribution network, such as branded jobbers and non-branded marketers, are in a position to seize marketing opportunities and expand their role in the retail sector. The capability of these firms to do this tends to
be commensurate with their size and access to high volumes of gasoline. Both dictate a firm's ability to meet the challenges of a market that favors high volume operations. On the basis of the amount of gasoline flowing through the variously owned outlets, for example, a recent Department of Energy study (15) showed that for every 100 gallons of gasoline that refiners sold through their company outlets in 1972, they sold 202.1 gallons to such outlets in 1979. At the same time, for every 100 gallons they sold to branded jobbers and unbranded marketers in 1972, refiners sold 168.4 and 185 gallons, respectively in 1979. The combined sales to branded jobbers and non-branded marketers actually exceeded the increase in sales to company owned outlets.

2. Generally, the Department of Energy does not have an adequate data base to complete a systematic and comprehensive analysis of the petroleum industry. Consequently, it is extremely difficult to monitor and control the interaction within the industry.

3. At all levels of the DOE-ERA administrative structure there is evidence that inadequate staffing prevents effective administration of the allocation regulations.

4. Throughout the DOE and ERA, there is a general belief that deregulations is the correct course for Congress to follow. Consequently, the allocation regulations seem to be administered in an atmosphere of benign neglect.

5. Contrary to the commonly held belief, ERA is not entirely responsible for all of the slow processing of applications for exceptions and appeals. Very often applicants submit incomplete applications, creating most of their own problems.
6. At the time they were promulgated by Congress, in response to the 1973-74 crude oil shortage, there was a reasonable justification for the allocation regulations. They were intended to address the short-run energy crisis. Yet, they have been extended over the past seven years. In order to adjust to the dynamics of the gasoline industry, a patchwork of amendments has been appended to the regulations in a reactive, crisis management style. In order to be effective the allocation regulations require a major overhaul.

7. The allocation regulations, particularly as they are widely applied, limit the ability of many existing retailers to expand their operations and respond to today's marketing conditions—conditions which favor high-volume outlets operating on low per gallon profit margins. At the same time, they allow new entrants to acquire sufficient volumes of gasoline to compete successfully, thereby providing them with a clear competitive edge over businessmen who have been involved in retailing for years. Thus, while guaranteeing access to gasoline supplies, the regulations have worked to stymie many of the retailers they were established to protect from competing effectively.

8. The regulations are administered through a decentralized network of 10 regional offices, an arrangement that has contributed to creating disparities in the way the regulations are applied. Not only have these disparities had differing impacts on the retailing sector, but they have rendered the regulations vulnerable to appeals.
CHAPTER VII. POLICY IMPLICATIONS AND RECOMMENDATIONS

The centerpiece of the allocation regulations are the two often irreconcilable objectives of equity and efficiency. Within the free enterprise system of the American marketplace, entrepreneurs attempt to maximize their profits by organizing their factors of production in an input-output relationship where the most efficient mix leads to the achievement of the stated objectives. The efficient allocation of resources which is highly desirable from the point of the entrepreneur may not necessarily lead to an equitable distribution of wealth and services from society's point of view.

The Congress of the United States, on the other hand, has the dual responsibility of promoting and ensuring an efficient and competitive marketplace, and enhancing and providing equal opportunities for all members of society to take part in the marketplace. It is often difficult to strike that happy medium, the so called "trade-off" between efficiency and equity, for pure efficiency cannot be achieved without encumbering upon equity, and vice-versa.

The issues that have been analyzed in this study have clearly indicated the inbalances that have been created by the allocation regulations, and seem to point towards certain conclusions and implications.

Any form of regulation exogenously superimposed on the activities of the free marketplace is expected to create distortions; and the longer the imposition of the regulation, the greater the
distortions and the repercussions resulting from it. This has been demonstrated in the six years the allocation regulations have been in effect.

The gasoline industry (especially the retail sector) is going through a change where economies of size and scale, and market efficiencies are realized through larger size and higher volume. Because of this, smaller sized operations are forced out of the market, thus leading to reductions in the number of retail outlets. Since it is no accident that most of the high volume larger outlets are company owned, the greatest burden or impact from this attrition will be felt by the small independent retailer.

Drawing on the analysis of the petroleum industry and the impacts of the allocation regulations on gasoline marketing, the following policy recommendations are presented. In developing these recommendations, primary attention is given to the economic viability of the independent gasoline marketer.

It is recommended that divorcement legislation be promulgated by the U.S. Congress. This would require that both refiners and wholesalers refrain from being participants in the retailing of motor gasoline.

It is recognized that legislation of this type envisages a significant restructuring of the marketing sector of the gasoline industry which would be strongly resisted by several interest groups. While the ultimate decision lies in the hands of Congress, it could be several years before a conclusion is made and a divorcement legislation
is implemented. In the meantime, it is also recommended that the allocation regulations be continued until divorcement legislation is enacted. Recognizing the flaws in the regulations and the advantages they seem to confer to some marketers, however, several regulatory revisions are required. These revisions are essential if the regulations are to accomplish their purpose of protecting the competitive environment of independent marketers.

To this effect, it is therefore recommended that the regulations:

a) Incorporate a downward certification provision which would require middle marketers (jobbers) to submit to ERA decisions on how the amount of gasoline from closed stations be distributed. ERA regional offices should have the option of determining how the specified amount of gasoline should be distributed.

b) Eliminate the upward certification provision of the regulations, a provision that encourages the proliferation of retail outlets at the expense of reducing the allocation fraction for existing retailers.

c) Relax the exceptions process to allow existing outlets to expand their operations in order to respond to growth in market demand.

d) Establish more stringent new station allocation standards that restrict the entry of new outlets and limit the amount of gasoline that can be assigned to them.

Together these measures comprise a comprehensive plan for remedying the major deficiencies of the allocation regulations.

Of the four measures, the last would constitute the most significant regulatory change. One practical approach to restricting the entry of new stations would entail instituting a moratorium on new
station allocations. A moratorium should not, however, be applied as an absolute, across the board measure. It should be conditional, allowing for exceptions in cases in which:

- An applicant has already made financial (capital investment) commitments or engaged in a legally binding contract before the effective date of the moratorium.
- The new station is merely replacing another station that has been closed and market area demand warrants the additional supply.
- Population density or business activities in the market have increased substantially.
- A significant loss of product has occurred in the market area and cannot be compensated for by increasing the allocations to the market area's existing stations.

Along with these proposed regulatory measures, it is highly recommended that DOE: 1) demonstrate a commitment to the allocation regulations by hiring sufficient personnel at the regional level in order to carry out its administrative responsibility effectively and efficiently; 2) build a database on the gasoline industry at various levels of disaggregation so that policy makers have a reliable source of information.
APPENDIX A

LIST OF REFERENCES


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