



## The Economic Impact of the Liberalization of Oil Market\*

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Since the first oil shock in 1973, oil pricing has become a very sensitive policy issue. Past governments have thus implemented various measures to stabilize domestic oil prices in order to avoid political backlashes. Oil prices were subsequently placed under government control, and the Oil Price Stabilization Fund was established in 1977 as a major tool to maintain price stability. Although the Fund to some extent helped stabilize domestic oil prices, it inadvertently created many problems, such as a distorted pattern of consumption, illegal dilution of oil products, and a delay in the development of alternative indigenous energy resources.

To reduce the adverse affects of the stabilization measures, a major price liberalization policy was introduced in 1991. [Table 1](#) compares the oil price regulatory regimes before and after liberalization. After seven years of implementation, the liberalization policy is now widely believed in academic and business circles to have had a positive impact on the oil industry and to have generated net gains for consumers and tax payers. The general public seems to disagree, however, as the policy impact is not fully understood. There are several myths with regard to liberalization. For example, there are claims that since liberalization, the adjustment of domestic oil prices has become sensitive to an upward movement in the world price, but sluggish in response to a downward movement. This reflects opportunistic behavior on the part of oil companies. There is also a belief that liberalization has resulted in a general increase in production and service costs. Among the various arguments against liberalization, the issue of equity is often raised. For example, some have argued that, to create equity among regions, a single-price policy should apply nationwide.

Although not all the myths are widely held, those that attracted attention have caused some confusion among consumers. The danger is that, if such myths are held by policy makers or a majority of consumers, they can become an obstacle to further liberalization, or could even lead to a policy reversal.

The major goal of this research is to dispel these myths and to consider the impact of the oil market's liberalization objectively from the public interest point of view. In particular, we focus on three issues which are key public concerns:

1. The impact of liberalization on the stability of the oil price and the speed of price transmission.
2. The impact of liberalization on resource allocation efficiency. The study focuses, in particular, on three sub-topics, namely, the evaluation of the impact on major economic sectors, the impact on consumption efficiency, and the assessment of the validity of the single oil price policy.
3. The impact of liberalization on the structure of the oil market and the conduct and performance of oil companies and dealers.

The rest of this summary will highlight major findings concerning the above topics.

### THE IMPACT ON PRICE STABILITY

We begin our analysis by assessing the effectiveness of the price stabilization scheme through the establishment of the Oil Fund. In assessing the effectiveness, we propose a price stability index that measures the degree of fluctuation of the domestic price relative to that of the world price. We find that:

- Price control through the Oil Fund was quite effective when there were small fluctuations in the world price, as evidenced by relatively stable prices during most of the period before liberalization.

- Price control became ineffective, however, when the world price changed drastically during the first half of 1991. Apparently, the ineffectiveness of the Oil Fund in stabilizing the oil price and the depletion of the Oil Fund Reserve were two compelling reasons for the government to liberalize the market.

From the finding, it can be concluded that, contrary to popular belief, price liberalization helps stabilize domestic oil prices in the long run.

### **THE IMPACT ON THE SPEED OF PRICE TRANSMISSION**

Concerning the speed of oil price transmission, we have constructed an econometric model to test whether the speed of the transmission has been changed by the liberalization and whether the domestic oil price responds equally to the rise and fall in world market prices. From the analysis, we learn that:

- Before liberalization, Bangkok retail prices did not seem to respond to changes in Singapore prices. This is hardly surprising since the domestic price was controlled by the government.
- After liberalization, however, the domestic retail prices of all oil products became sensitive to the world price. Contrary to popular belief, after liberalization, the speed with which the domestic price changes in response to both upward and downward global price movements is virtually the same for gasoline, diesel and fuel oil.
- The domestic oil price in 1997 was more responsive to the world price than in the period immediately following liberalization, reflecting that the market has become even more competitive.

Thus, the popular claim about the opportunistic behavior of the oil companies is unfounded. The reason is that, in a competitive market, there is no room for oil companies to take advantage of consumers.

### **THE IMPACT ON MAJOR ECONOMIC SECTORS**

We also analyze the impact of the liberalization policy on key economic sectors. The focus is to identify sectors that are sensitive to oil price changes and thus are affected by the liberalization policy. Based on the cost structure of each sector, we find that:

- The sectors with the heaviest use of oil products, especially diesel, include sea, land and air transportation, fishery, mining, agricultural services—e.g., irrigation and cooperative activities—and electricity generation and distribution. The percentage share of cost of oil to the total cost in these sectors ranges from 14 percent for electricity generation and distribution to 31 percent for sea transportation.
- These sectors have been less negatively affected by liberalization than it would appear, referring only to the above percentages. For example, if the price of diesel rose by 1 percent, the cost of sea transportation would rise by less than 0.31 percent. This is for two reasons. First, every sector also consumes gasoline, which has become relatively cheaper since liberalization. Second, when prices rise, consumption falls, dampening the impact of price increases.
- Gains accrue to certain individuals, such as passenger car owners, who benefit from relatively cheaper gasoline. However, the collective gains of these individuals cannot be estimated.

### **THE IMPACT ON CONSUMPTION EFFICIENCY**

Theoretically speaking, resource allocation is most efficient when the market is allowed to operate freely. Deviations from the free market system due to government intervention will lead to efficiency losses in both consumption and production. Based on this concept, we estimate the efficiency gain resulting from liberalization, and show that society as a whole gains significantly. In particular, we show that:

- The benefit due to the correction of price distortion from the consumption side alone is estimated to be between 640 and 1,300 million baht per year at the 1990 consumption level. This is equivalent to 0.55-1.12 percent of total market sales.
- The above estimation is very conservative because certain benefits accrued to producers are ignored. These include the benefits gained from reducing the burden of exporting excess gasoline and the interest burden that

had been associated with frequent delays in Oil Fund refunds, etc. Due to a lack of information, we do not attempt to estimate these benefits.

- Other benefits accruing to society cannot be easily quantified. These range from the decrease in oil product adulteration, which had caused serious harm to humans and property, the decreases in the costs of adapting or changing car engines to be usable with cheap products by the car owners, etc.

Thus it is clear that, in terms of economic efficiency, liberalization has brought about tangible and significant benefits to consumers, producers, and society as a whole.

## THE VALIDITY OF THE SINGLE PRICE POLICY

A policy that would set a single price for each oil product nationwide was once proposed to create greater equity among regions. In this study, we show that:

- The proposed single price policy for each oil product can be approximated to the average price in each province weighted against their respective consumption volumes. The single-price policy thus entails higher retail prices in Bangkok and nearby provinces and lower prices in distant provinces. Consequently, the policy may have a positive income distribution effect.
- Unfortunately, the policy would result in price distortions, which entail an efficiency loss to society of 6.5 million baht per year, when two products, i.e., premium gasoline and high-speed diesel, are taken into account. A more significant loss, however, would arise from the administration costs of implementing the policy, which could be as high as 45 million baht per year.
- The policy would be inefficient in achieving its intended goal of promoting equity. This is because while the policy may succeed in targeting many provinces with low income levels, it also subsidizes many provinces with high income levels. Even within the subsidized provinces, the policy would indiscriminately subsidize both the rich and the poor.

Thus there is no justification for supporting the single price policy. More broadly, our study also rejects the validity of any policy that creates price distortion according to location, including one currently being implemented.

## THE IMPACT OF LIBERALIZATION ON THE RETAIL MARKET

To ascertain the impact of liberalization on the retail market, we have compiled some data, interviewed oil companies, and conducted surveys on retail stations and consumers. We focus on three main aspects of the impact: The industry's structure, conduct and performance. Industry structure concerns the number of companies in the business, their relative network size and the sales volume per station. Industry conduct includes price and non-price competition. Finally, industry performance concerns sales volume and profitability.

### THE IMPACT ON THE INDUSTRY STRUCTURE

Concerning the impact of liberalization on the retail industry structure, we find that:

- At the time of liberalization in 1991, there were 3,473 retail stations in Thailand. The four major oil companies, i.e., PTT, Shell, ESSO and Caltex, had a combined retail station share of 88.9 percent (See [Figure 1a](#)). The growth rate of the retail stations at that time was about 4-5 percent per year. This amounts to 150-200 stations being added to the distribution network annually.
- The years after liberalization have witnessed continuing high growth rates of the retail station expansion, with an average annual growth rate of 20.9 percent. This is equivalent to the annual increase of 1,233 stations since deregulation. As a result, the total number of stations had risen to 10,874 in the first half of 1997.
- By 1997, the combined retail station share of the four majors had fallen to 36.7 percent as the share of Article 6<sup>1</sup> newcomers' had expanded from 3.8 percent in 1991 to 27.4 percent. The share of non-Article 6 companies had also grown rapidly from 7.3 percent in 1991 to 35.97 percent in 1997 (See [Figure 1b](#)). This indicates that the market has become much more competitive after liberalization.

- Apart from market forces, efforts by the Public Works Department to register informal non-Article 6 stations, e.g., skid tank stations, for safety regulation, may partly explain the rapid growth in the number of stations.
- As a result of the high growth, average throughput per station of the five major brands, including Bangchak, has fallen from 296,600 liters per month in 1992 to 246,860 liters per month in 1997. Average throughput per station of non-major Article 6 stations is believed to be lower than that of the major brands.

Thus the market has become much more competitive with regards to the number of companies in business, the expansion of retail networks, the less concentrated share of distribution channels, and the tougher environment in which to obtain sustainable throughput for retail stations.

## THE IMPACT ON PRICE COMPETITION

One major impact of liberalization has been the emergence of price competition among traders and retail stations. Concerning this, the survey reveals that:

- Price gaps of the major brands are observed to be as small as 3-4 satang per liter for most products. Thus, it seems that price cutting is clearly not an intended tool to promote sales among major brands. In fact, retail stations are discouraged, if not prohibited, to cut prices. In areas with heavy price competition, however, major brands may try to match the prices of low price competitors. In that case, dealers are normally asked to share the 'cost' of price cutting.
- Some small foreign brands, e.g., Jet, are quite active in cutting prices to gain customers. Significant price cutting can be very effective in gaining sales volume, provided that others do not try to match the price. For a small foreign brand, being a company-operated station has an advantage over a dealer-operated station in a price war.
- Independent Thai stations normally set their prices slightly lower than those of major brands. Significant price cutting is not often found, especially in dealer-operated stations. However, some TPI and MP company-operated stations may decide to cut prices.
- For a skid tank station, price cutting is a usual practice in attracting consumers. In highly competitive areas, the price gap among these outlets can be as wide as 20-30 satang per liter.

In summary, different pricing strategies demonstrate a positive sign of the market that will eventually benefit consumers. This should be taken as a major achievement of liberalization.

## THE IMPACT ON NON-PRICE COMPETITION

In addition to price competition, non-price competition has become an ordinary practice in the retail market. The survey interestingly shows that:

- Usual forms of non-price competition among retail station are good forecourt services, credit, cleanliness, free give-aways, complete car care services and quick and convenient customer service facilities.
- Forecourt services are difficult to improve because of acute manpower shortages, with a high rate of turnover in most areas.
- Credit has been an effective way to gain volume and to establish a base of regular customers. However, giving credit can entail high risk.
- Cleanliness has become increasingly important and many major brands' stations are built without car wash, car repair, tire repair, or other car care services that may affect cleanliness of the stations.
- Free give-aways have become a normal expectation of consumers. Giving away gifts is not to raise sales volume but to prevent them from falling off as competitors regularly give away things to customers.
- Quick and convenient customer service facilities, such as mini-marts and restaurants, have not only attracted customers to stations, but also are major sources of station revenues. Competition in this regard will certainly expand.

Although the real benefits of some forms of non-price competition, especially the give-aways, can be debatable, non-price competition is a clear sign of a healthy market since it provides consumers with many choices to fit their needs.

## THE IMPACT ON SALES AND PROFITABILITY

It is widely believed among economists that, in a competitive market, it is impossible for a company to make more than normal profits. Our survey strongly confirms the belief:

- The retail oil business is clearly not highly profitable for most station owners. Sales volumes of 250,000-300,000 liters a month are required just to cover the operating expenses of a retail station. This level of monthly throughput is becoming harder to achieve in many areas.
- The major expenses of a retail station are labor costs, electricity charges, costs of give-away gifts and rental fees. Labor costs alone exceed 100,000 baht a month for a medium size station with 20 workers. Electricity costs usually exceed 20,000 baht a month, excluding convenience (CV) stores. Free gift costs are shared with oil companies. However, the cost share of the station owner is about 4-5 satang per liter. Station rent varies among stations depending on investment conditions. The range is between a few thousand to several hundred thousand baht a month.
- Average margins for leased stations are between 30-35 satang per liter. Dealer-owned stations may earn about 60-65 satang per liter while high-volume stations may receive extra rebates of 10-30 satang per liter.
- For most stations in the survey, the margins from fuels are just enough to cover operating expenses. Profits are earned from non-fuel income. Main income earners are CV stores and car washes. The average gross CV store margin is 18 percent. Monthly franchise fees, if any, run between 3-7 percent of sales revenues. Rising operating costs and stronger competition make it necessary to seek income from non-fuel services if the station is to survive. However, non-fuel services are not money makers for all stations.

## CONSUMERS' PERCEPTION OF THE IMPACT

We conducted a survey of 312 consumers to seek their opinions concerning the effects of the oil price deregulation. The sample consists of passenger-car, pick-up truck, truck, bus, and motorcycle drivers. From the survey, we find that:

- The most significant factors affecting a consumer's decision to buy from a particular brand are oil product quality (38 percent responding), location and convenience (18 percent responding) and oil price (15 percent responding). On the other hand, free gifts were said to be insignificant. The finding contrasts with that of the retail station survey that shows that they are an effective marketing tool.
- About 60 percent of the consumers notice price differences at retail stations and believe it to be between 1-25 satang per liter. However, only 30 percent of the consumers usually seek low priced stations.
- 95 percent of the consumers are convinced that oil retailing is a competitive business. 77 percent observe that deregulation has resulted in the growth of retail stations and 52 percent notice that the policy has made competition stronger. On the other hand, 65 percent believe that deregulation has made prices higher. 75 percent of consumers mention that services have improved since deregulation and 39 percent believe that oil quality has improved.
- For the overall evaluation, 37 percent of the consumers believe that the deregulation has made them better off, 26 percent say they are worse off, while another 26 percent responded that they are unaffected. About 70 percent also say that they have not changed their consumption behavior since deregulation.

From the survey, we can conclude that most consumers believe that the liberalization has brought about many benefits to them. Concerning oil prices, however, they somehow believe that oil prices have risen since liberalization. This may help explain the origin of many myths previously mentioned and emphasize the importance of an objective evaluation of the policy and a better public relations effort.

[Table 2](#) summarizes the major impact of the oil market liberalization on consumers, the retail industry, and society.

*With the above objective and systematic evaluation, we have shown that the 1991 liberalization has been successful in*

*creating a much more competitive oil market. This in turn has brought about several benefits to consumers and society as a whole. Further liberalization in areas that are still under government control is thus worth consideration.*

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