

# International Competitiveness of Japan's Petroleum Industry: A View from Applied Business History

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## ABSTRACT

This study uses historical analyses to offer recommendations on developing the international competitiveness of Japan's petroleum industry. The choice was made to focus on historical processes in discussing this contemporary subject, as this study uses applied business history to perform analyses.

**Keywords:** petroleum industry, international competitiveness, vertical integration, horizontal integration, applied business history

**JEL Classification Numbers:** L10, N45, N85

## 1 Introduction

The study of applied business history is about identifying the dynamism of industrial and corporate growth through an examination of business history; then, based on the findings, such studies explore solutions to the contemporary problems encountered by relevant industries and companies. Analysis that takes an applied business history approach makes use of the following steps.

1. Clarify the context of the industries and companies that encounter problems
2. Consider historical context when trying to identify the essence of those problems
3. Discover the latent dynamism of growth (which has not become obvious in many cases) in the relevant industries and companies—a driving force in problem-solving
4. Based on steps 1–3, and as much as possible, obtain a clear view of the path by which to resolve the problems encountered by the relevant industry and companies

In line with steps 1–4, this study discusses the path that Japan's petroleum industry should take, if it wishes to become more competitive internationally.

## 2 Historical Context of Japan's Petroleum Industry

With respect to step 1, an examination of the historical context of Japan's petroleum industry raises certain important points.

First, non-Japanese oil companies deeply penetrated the Japanese petroleum market, right after the industry was established in the country. This put Japanese oil companies, which were then very young, at a disadvantage in terms of market competition. Socony, a company in the US Standard Oil Group assigned to export to Asia, replaced conventional commissioned sales with direct selling, in preparation for competition against the growing emergence of Russian kerosene in the Asian market. Socony established its Japanese branch in 1893. M. Samuel & Co. handled imports of Russian kerosene in Japan. The oil division of M. Samuel & Co. became independent in 1900 and a Japanese corporation, Rising Sun Oil, was established. Immediately thereafter, Rising Sun Oil became affiliated with Asiatic Petroleum, a company established in 1903 that belonged to the British–Dutch-owned Royal/Dutch Shell Group. Having been established as a Japanese domestic oil company in 1888, Nippon Oil joined forces with Hoden Oil, a company established in 1893, entering the oil sales market through a vertically integrated strategy that started with upstream sectors and developed into downstream ones. However, the pair failed to achieve a competitive edge over non-Japanese oil companies. This fact is made clear by the fact that in 1910, a four-company agreement on a kerosene cartel in the Japanese market was executed, which decided that the inland sales shares should be 43% for Socony, 22% for Rising Sun Oil, 21% for Hoden Oil, and 14% for Nippon Oil.

Second, Japanese oil companies by the mid-1920s began to adopt a system of refining in the consumption area, in an attempt to compete against their non-Japanese counterparts. This marked the starting point of a split between the upstream and downstream sectors in Japan's petroleum industry. Companies like Nippon Oil and Ogura Oil adopted such a system wherein crude oil was imported and refined in Japan, with the aim of securing an advantageous competitive position against non-Japanese oil companies that imported products into Japan; this was in line with the principle of refining in the production area. The Japanese government also took a host of policy actions in support of domestic oil companies' efforts to practice this refining approach. The Japanese oil companies' resistance to their non-Japanese counterparts, based on the approach, was successful to some extent; it failed, however, to go as far as to change the basic structure of the Japanese oil market—namely, those that were advantageous to non-Japanese oil companies. In 1932, a gasoline cartel agreement in the Japanese market was reached among a number of

companies; they decided that their sales shares would be 32% for Rising Sun Oil, 24% for Nippon Oil, 21% for Socony-Vacuum Oil, 13% for Ogura Oil, 7% for Mitsubishi Oil, and 3% for the others. Peculiarly, the adoption of refining-in-consumption-area systems by companies like Nippon Oil and Ogura Oil had historic significance, in that it eventually created a split between the upstream and downstream sectors.

Third, the framework of the Japanese postwar petroleum industry was formed in the occupation period that followed the country's defeat in World War II. This framework is characterized by refining in the consumption area and foreign-capital affiliations. Non-Japanese oil companies, including the so-called Majors, began to change their attitudes toward the Japanese market after the war. Significant increases in the production of crude oil in the Middle East and the expansion of the refining-in-consumption-area system in western Europe led to a shift in Japan to a system that assumes crude oil imports. After such changes, the period between 1945, right after the war, and 1952 saw rapid progress in the formation of partnerships between Western oil companies and Japanese oil refiners, based on the principle of refining in the consumption area. Partnerships between the Majors and the Japanese oil refiners represented a symbiotic, win-win situation; the one between Toa Fuel Industry and Stanvac in Japan, for instance, was quite naturally a mutual complement, since the former had no capacity to supply crude oil or sales networks, despite having oil-refining facilities, while the latter had no oil-refining facility and had sales networks and the capacity to supply crude oil. The principle of mutual complementarity was also at work in the partnership between Nippon Oil and Caltex: the former was sufficiently capable of refining and selling, but had a low crude oil supply capacity, while the latter was sufficiently capable of supplying crude oil but lacked oil-refining facilities and sales networks. The framework, characterized by refining in the consumption area and foreign-capital affiliation—which subsequently lasted many years—was significant in facilitating the full-scale split between the upstream and downstream sectors of Japan's petroleum industry.

Fourth, the oil policies of the Japanese government, as embodied in the 1962 Petroleum Industry Law, successfully stabilized the split between the upstream and downstream sectors; they also brought about a surplus of excessively undersized oil companies. Enacted in 1962 under a framework that featured refining within the consumption area, the Petroleum Industry Law aimed to stabilize the oil supply by controlling the downstream refining and distribution sectors. That Law's intent was to resolve the upstream-downstream split. By enacting the Petroleum Industry Law, the Japanese government exercised care in mitigating significant fluctuations vis-à-vis the refiners' existing sales shares. The status-quo policy sealed off competition-based selection and, as a consequence, the downstream sectors of Japan's petroleum industry created a situation similar to that involving an escort and convoy, resulting in a continued surplus of excessively undersized companies. This situation also occurred in the upstream sectors.

The Japan National Oil Corporation<sup>1</sup> invested in and financed oil development companies. The investment and financing were selective moves that clarified a strategic focus, but they were based on the principle of equal opportunity. These moves triggered an upsurge of small-sized development companies. The oil policies compliant with the 1962 Petroleum Industry Law remained unchanged, even after the oil crisis of the 1970s—a process during which the Majors' influence dwindled. The vulnerability of Japan's petroleum industry, underscored by the split between the upstream and downstream sectors and the surplus of excessively undersized oil companies, thus acquired its structure.

Fifth, no oil company strong enough to serve as a parent organization for a national-flag company appeared in Japan, despite continued deregulation in the petroleum industry from the late 1980s onward; this circumstance led to a collapse of those policies that had been based on the 1962 Petroleum Industry Law.<sup>2</sup> Deregulation resulted in intensified competition within Japan's petroleum industry and a decrease in the gross margin of regular gasoline. In consideration of these changes, Caltex dissolved its capital alliance with Nippon Oil in 1996; this move was preceded by foreign investors' withdrawal from Mitsubishi Oil in 1984. Nippon Oil and Mitsubishi Oil, both undergoing transitions from foreign-affiliated to domestic oil companies, merged into Nisseki Mitsubishi in 1999. Around the time Nisseki Mitsubishi emerged, horizontal integration was progressing in the downstream sectors of Japan's petroleum industry, and this was beginning to eliminate the surplus of excessively undersized downstream companies. Nonetheless, none of the downstream companies that later emerged from the horizontal integration were ultimately strong enough to become a parent organization for a national-flag oil company and proactively expand into the upstream sectors and eliminate the upstream–downstream split. This was due to a vicious cycle in which, despite the existence of strict regulations such as the Petroleum Industry Law, weakness in the industry prompted government intervention that, in turn, aggravated that weakness, thus prompting additional government intervention. In other words, a downward spiral took root, and its influence persisted even after deregulation. The downstream of Japan's petroleum industry—where the influence of the downward spiral was felt for many years—generally experienced a weakening of organizational abilities among the companies involved. This weakening discouraged the feasibility of a process by which a national-flag oil company could be formed—a process wherein downstream companies would merge with and/or acquire upstream companies while taking a vertical integration form, which would result in progress vis-à-vis horizontal integration in the upstream sectors.

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<sup>1</sup>The Japan National Oil Corporation's forerunner, the Japan National Oil Development Corporation, was established in 1967, but took this revised name in 1978 when it launched oil-stockpiling activities.

<sup>2</sup>This Law was abolished in 2001, and the Japan National Oil Corporation was disbanded in 2005.

### 3 Two Types of Vulnerability within Japan's Petroleum Industry

Step 2 relates to a consideration of historical context, an attempt to identify the essence of various problems. While considering the historical contexts mentioned in the previous section, the problems encountered by Japan's petroleum industry can be essentially identified as relating to two types of vulnerability:

1. A split between upstream sectors (development and production) and downstream sectors (refining and distribution)
2. A surplus of excessively undersized upstream companies

The 2010 ranking of the top 50 oil firms of the world, published by the US magazine *Petroleum Intelligence Weekly* (PIW) in December 2011, contains no Japanese companies. One obvious reason for this is that Japan's oil industry is divided into two sectors: firms involved in upstream operations and those engaged only in downstream operations. The firms that held the top spots in the PIW ranking can be roughly classified into three groups: (1) oil Majors like Exxon Mobil and Royal/Dutch Shell, (2) the national-flag oil firms of non-oil producing countries, such as Total of France and ENI of Italy, and (3) national oil firms of oil-producing countries, such as Saudi Aramco of Saudi Arabia and PDV of Venezuela. The companies in groups (1) and (2) are vertically integrated firms that have both upstream and downstream operations; they usually earn money in profitable upstream operations. In times of falling crude oil prices—e.g., 1998—they compensate for a decline in upstream profits with increased profits from downstream operations; these downstream profits result from higher demands that stem from falls in oil-product prices. This mechanism by which the strength of vertical integration is managed and kept stable does not exist in Japan's oil industry, where the upstream and downstream are divided.

The separation of upstream and downstream operations is not the only vulnerability inherent in Japan's petroleum industry. Another is the oil industry's structure, which has been characterized as offering “too little for too many.”

As indicated in Tables 1 and 2 below, which show the results for 1997, the aggregate total of all downstream operations in Japan's oil industry is roughly equivalent to that of one international oil Major, while that of Japan's upstream operations is roughly the same as that of a national-flag oil firm of a non-oil producing European state. Had upstream and downstream operations in Japan been integrated into single entities within their respective sectors, the operational levels of the two companies could have grown to match those of major international players. In reality, however, too many firms are operating in either the upstream or downstream sectors.

In the downstream sector, there were 29 oil refiners and wholesalers as of the end of fiscal 1998; there was also a plethora of upstream operators. In Japan, companies going into the upstream sector were able to receive government

**Table 1.** Oil-refining Capacity and Oil-Product Sales of Select Companies and Japan, 1997.

Company	Country	Oil-refining capacity (millions of barrels per day)	Oil-product sales (millions of barrels per day)
Royal/Dutch Shell	Netherlands/UK	4.03	6.56
Exxon	US	4.38	5.43
Mobil	US	2.28	3.34
(Total for Japan)	Japan	5.32	4.19

**Source:** Agency for Natural Resources and Energy.

**Table 2.** Oil and Natural Gas Output of Select Companies and Japan, 1997.

Company	Country	Oil output (barrels per day)	Natural gas output (millions of cubic feet per day)
Elf	France	800,000	1,312
Total	France	530,000	1,488
ENI	Italy	650,000	2,080
(Total for Japan)	Japan	680,000	1,646

**Source:** Agency for Natural Resources and Energy.

financial support in the form of either investment or lending, via the Japan National Oil Corp. (JNOC), which had been created in 1967 as the Japan Oil Development Corp. and renamed in 1978 after the corporation started an oil-stockpiling-related business. As of the end of fiscal 1997, there were 28 parent companies (i.e., the largest private-sector shareholders) with JNOC-funded projects, and other JNOC-invested companies. In short, some 30 companies in Japan comprise a scale of business equivalent to that of a single Western company, either upstream or downstream. This inevitably makes the size of each Japanese oil firm very small. Japanese oil companies are unable to make the rankings of major oil firms not because of the scarcity of domestic oil resources but because of the industrial structure, characterized by “too little for too many,” on top of the upstream–downstream separation.

The creation and maintenance of this “too little for too many” structure seems to have been heavily influenced by the Japanese government’s modes of intervention. In administering the Petroleum Industry Law among downstream oil companies, the Japanese government tried to keep intact the previous market shares of the existing refiners. This policy of maintaining the status quo precluded any competition-based selection, and consequently created a do-nothing “convoy” situation (i.e., the government acted as a protector, ensuring the survival of firms that followed the “convoy”). This allowed too many small firms to survive by doing too little work.

A similar convoy situation was created in the upstream business. JNOC offered investment in or lending to oil development firms, but rather than be selective, money was given under the principle of equal opportunity, creating an industry crowded by numerous small oil developers. Moreover, even when exploration firms failed in development and became debt-laden and virtually bankrupt, JNOC provided financing that propped them up, thus blocking the “invisible hand of the market” and hampering the “weeding out” of failed companies.

In Japan’s oil industry, as seen thus far, it appears that structural weaknesses were essentially created during the period of high economic growth. Problems were then exacerbated by half-hearted responses to the changing environment, following the oil shock. For example, JNOC financing led to the establishment of many small, and often nonviable, oil exploration firms, since the recipients of investment or loans were chosen not by qualitative criteria (which would have determined those energy firms that were actually viable), but rather by quantitative criteria (which would help secure as many barrels of oil for Japan as possible). It can be assumed that the oil shock helped accelerate this tendency.

Under the 1962 Petroleum Industry Law, the problem of a surplus of excessively undersized oil companies spread across the upstream and downstream sectors alike; however, the integration of downstream companies around the time of Nisseki Mitsubishi’s foundation began to mitigate this surplus in the downstream sectors. As a result, the second aforementioned type of vulnerability—i.e., a surplus of excessively undersized oil companies—became increasingly limited to upstream sectors.

#### **4 Driving Forces in Conquering Vulnerabilities and Developing Competitiveness**

Step 3 is about discovering the dynamism of growth latent in a relevant industry and pinpointing those companies that will be driving forces in resolving problems. Important within the context of the current study is the finding that oil company managers’ brave entrepreneurial efforts were quite ubiquitous as the petroleum industry grew in Japan.

There were a number of key oil company managers. Hashimoto Keizaburo, an *amakudari* (retired bureaucrat in the private sector) manager of Nippon Oil,

brought about mergers with Hoden Oil and Ogura Oil and adopted the refining-in-consumption-area system, in order to prepare for competition against non-Japanese oil companies. Nakahara Nobuhei, who climbed the ladder to become a manager at Toa Fuel Industry through internal promotion, took many different measures to continue the company's "challenge from within" approach to its capital partners such as Stanvac, Exxon, and Mobil.<sup>3</sup> Idemitsu Sazou, a sole proprietor, repeated a "challenge from without" against the Majors—through, for example, prewar expansion into the Chinese, Korean, and Taiwanese markets, the Nisshomaru incident (a volume purchase of oil from Iran) in the post-war era, and the import of crude oil from the Soviet Union.

Each of these company managers and their like possessed a range of characteristics that contributed to the growth of Japan's petroleum industry. They overcame differences in their characteristics and consistently based their actions on independence and voluntarism, even as their industry sustained significant governmental intervention. The managers' proactive efforts often restricted the activities of non-Japanese oil companies that continued to take large shares of the Japanese oil market. These companies showed no significant resistance to the enactment of the Petroleum Industry Law in 1934, or to that of the Petroleum Industry Law in 1962, even though both of these laws contained provisions that would place non-Japanese oil companies at a disadvantage. This was because the non-Japanese oil companies expected the law to control or otherwise restrain their Japanese counterparts (Matsukata Japan-Soviet Oil or Idemitsu Kosan) that had vigorously expanded their activities in each of these periods.

Considering these facts, it is safe to say that a driving force for overcoming the structural vulnerabilities of Japan's petroleum industry—and for enhancing the industry's international competitiveness—should be sought among the entrepreneurial activities of oil company managers. Facilitating the emergence of dynamism vis-à-vis the growth of Japan's petroleum industry requires higher (and persistent) levels of entrepreneurial activity.<sup>4</sup>

## 5 The Path to a National-Flag Oil Company

We close with an explanation of step 4, having acquired a more concrete view of a path to resolving the problems encountered within this industry and the its related companies.

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<sup>3</sup>This challenge was taken over by Nakahara's son Nobuyuki, who also took over the presidency of Toa Fuel Industry.

<sup>4</sup>An Italian example—in which Enrico Mattei's entrepreneurial activities led to the formation of Eni S.p.A., a national-flag oil company almost equivalent in scale to that of the Majors—suggests the validity of this argument.

As noted, the vulnerability of Japan's petroleum industry is characterized by (1) a split between its upstream and downstream sectors and (2) a surplus of excessively undersized upstream companies. Basic policies for overcoming these types of vulnerability should be pursued by downstream oil companies, whose scales of operation are generally increasing by virtue of management integration. These companies could merge with and/or acquire upstream oil companies in the form of vertical integration to, as a consequence, facilitate horizontal integration among the upstream sectors. This policy appears to be ideal, since it would simultaneously resolve the two types of vulnerability that Japan's petroleum industry faces. In reality, however, the realization of this basic policy is not likely, due to a lack of decisive outcomes that would mark a departure from being predisposed and accustomed to low profits—the biggest challenge for downstream oil companies. Although deregulation since the mid-1980s has led to a trend wherein corporate marriages are more commonplace within the downstream sectors of Japan's petroleum industry, the after-effects of a downward spiral that features industrial vulnerability and governmental intervention have hampered efforts to overhaul the industrial structure and thus achieve full-scale improvements.

It is difficult to put basic policies immediately into action; realistic actions that are separate from basic policies are needed. Such actions may include: (a) horizontal integration among upstream sectors and (b) the strengthening of downstream oil companies' organizational abilities. Additionally, (b) can be divided further, into the facilitation of high-level integration among petroleum complexes in Japan and boosting the oil-refining business' international competitiveness (b1), and adopting a new approach to leveraging downstream technical strengths, in order to focus on the upstream and thus incorporate a mechanism by which to make profits in concert with upstream sectors (b2). In particular, (b2) is a common practice among global oil industries.

The 2000s witnessed considerable progress in terms of (a), (b1), and (b2). For (a), the growth of INPEX Teiseki facilitated horizontal integration among the upstream sectors. Concerning (b1), progress in high-level integration among petroleum complexes—most notably the Research Association of Refinery Integration for Group-Operation (RING)—was followed by what might be called a “petrochemical complex renaissance.” This is gradually bearing fruit in the form of the creation of a new business model that aligns with (b2), wherein downstream technical strength is being leveraged in order to focus on the upstream. Each of the mechanisms is working effectively; the Japan Oil, Gas and Metals National Corporation (JOGMEC) supports (a), RING supports (b1), and the Japan Corporation Center, Petroleum (JCCP) supports (b2).

In terms of developing the international competitiveness of Japan's petroleum industry, while we need not be pessimistic about the current state affairs, international competition among oil industries has undoubtedly intensified to an unprecedented level. It can be said that Japan's petroleum industry has successfully achieved international competitiveness when it has established a

national-flag oil company that can successfully thrive internationally in this brutally competitive industry.

Just before World War II, the Japanese government successfully pursued two different challenges vis-à-vis the oil industry, which were in a sense contradictory: (A) developing a domestic oil-refining industry, to lessen Japan's dependence on other countries, and (B) continuing a certain scale of import business to secure an absolute amount of petroleum, as a sort of strategic supply (i.e., preventing non-Japanese oil companies from withdrawing from Japan, in defiance of A). The clear fact is that for Japan, petroleum is essential to energy security; this will basically remain unchanged, even if oil demand were to decrease to a certain extent in the future. For a non-oil-producing, oil-importing country like Japan that is dependent on imports for oil and natural gas supplies, a basic energy security measure would be to help develop a national-flag oil company that can be sufficiently strong to compete in the global markets. The dynamism for growth in Japan's petroleum industry is gradually becoming obvious; when it starts working at a fuller scale and a national-flag oil company is formed through two different routes—namely, (a) horizontal integration in the upstream sectors, and (b) the strengthening of organizational abilities among downstream oil companies—Japan's energy security will be assured. Oil company managers and the Japanese government shoulder a huge social responsibility: the former are players in the dynamism for growth in Japan's petroleum industry, while the latter needs to support these managers' activities.