

Deregulation and Japan's Industry: The Case of the Petroleum Industry

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SUMMARY

This paper has highlighted case studies made with the petroleum industry to examine what the deregulation of Japan's government regulated industries means and what problems it faces. The results of these studies can be summed up as follows.

First of all, there is a kind of mutually intensifying effect between government involvement and industry fragility, creating a downward spiral between the two. In considering industrial deregulation, it is imperative that not only the aspect of industrial regulation causing the industry's fragility ([a] side) be examined, but also the aspect of industry fragility conversely generating government involvement ([b] side) be studied.

Second, in the so-called regulated industries where the above-mentioned mutually amplifying effect is exemplified, it follows that any progress of deregulation made by exterior factors will not necessarily lead directly to strengthening the business constitution of the industry concerned. The cause of this phenomenon is found on the [b] side of the mutually amplifying effect. In many cases, the companies comprising the regulated industries are not strong enough to endure surgical operation, that is the introduction of a market economy.

Third, to make the deregulation of the regulated industries truly meaningful, it is necessary that the implementation of deregulation be sophisticated enough to effectively induce the strengthening of the business constitution of the industry. The effective way is to limit the duration of the regulation (including government financial support), and then let the regulated companies exploit the governmental involvement (support) till it expires, to help strengthen their business constitution.

As cited as the second implication, currently most of Japan's regulated industries are in a type of bottleneck characterized by the combination of on-going deregulation and no progress in radical reform. To break this bottleneck does not mean calling off the on-going deregulation

(Policy A) or continuing the common assumption that "it is sufficient if a semblance of deregulation is achieved" (Policy B). Policy A ignores the [a] side of the mutually amplifying effect mentioned earlier. Policy B makes light of the [b] side. To make deregulation of the regulated industries truly meaningful, a practical and flexible way of thinking must be employed whereby government involvement is exploited within a limited period of time while, at the same time, efforts are made to strengthen the industry concerned.

Concretely speaking, the direction Japan's petroleum industry should choose may be found among the following: to develop vertically integrated companies, to pursue horizontal integration, and to operate strategically, including the purchase of existing oil fields. Needless to say, the necessary driving force lies with management effort by the oil company itself. However, it cannot be said that there is no room at all for government intervention. As the German case illustrates, government involvement can be effective if given in a sufficiently sophisticated manner that limits its duration and allows exploitation by the industry until it expires so as to effectively reform the industry.

I. INTRODUCTION

This paper will highlight case studies made with the petroleum industry to examine what the deregulation of Japan's government regulated industries means and what problems it faces. The petroleum industry of postwar Japan has continued to be a typical example of a "regulated industry". A "regulated industry" means an industry where government involvement in the business definitely regulates the actions of those companies which comprise the industry.

Since the middle of the 1980s, the global wave of market economy has been growing. In this worldwide climate, there have been loud calls for the emergence of market economies and for the elimination of governmental involvement. Considering the bottleneck situation (to be dealt with in detail later, in Section II of this paper) that has been dominant in Japan's petroleum industry since the end of the Second World War, an expanded market economy will be the logical choice of direction. However, to merely point this out and be content to assume the bland attitude that "all that needs to be done is simply to achieve deregulation" is not something to be condoned¹. This should not be forgotten. In examining the effects a market economy brings, the make-up of the market player as one to derive such effects and how he should play, also needs to be discussed². Just considering a market economy to be almighty without looking at it from the market player's perspective will often cause no less confusion than does considering government control to be a cure-all. If confusion arises in the energy industry as an industry that directly affects national security, it would cause serious and substantial social damage. To pursue an expanded market economy in the energy industry, it is necessary to look at things from the market player's point of view. A realistic and flexible idea should be adopted with regard to the deregulation of the energy industry, whereby the government's involvement is put to good use within a limited period of time, and, at the same time, the constitution of this industry must be strengthened (that is, by fostering stronger players) so as to make government involvement unnecessary.

With this in mind, what deserves special attention is that since the middle of the 1980s,

deregulation has shown steady progress in Japan's petroleum industry. Now, when government intervention regresses in favor of deregulation in government-regulated industries like Japan's petroleum industry, what situation will occur on the industry side? Is it safe to say that having the market economy introduced through deregulation (or having the government less involved) would really help strengthen the petroleum industry's inherently inadequate capability for systematization and adjustment? To make deregulation of the regulated industries truly meaningful, what should be done?

In order to answer these questions, this paper takes the following steps. First, Section II considers why the petroleum industry has been so weak in Japan, thereby showing that the reason lies in a "downward spiral of government involvement and the industry's fragility". Then Section III looks back on the process of the deregulation in Japan's petroleum industry and points out its problems. Section IV examines the situation of the world oil businesses, so as to derive lessons which Japan can use. Section V makes clear the choice of direction which Japan's petroleum industry should take. Section VI concludes this paper.

II. DOWNWARD SPIRAL OF GOVERNMENT INVOLVEMENT AND INDUSTRY

FRAGILITY

1. Fragility of Japan's petroleum industry and reasons for it

In present day Japan, the deregulation of different regulated industries has been promoted on grounds including: (1) deregulation is necessary to cope with globalization, (2) it will benefit the consumer, (3) it will save cost and expense (including financial subsidies) incurred with government control, and (4) it will strengthen the industry's constitution. The most remarkable of these here is (4), for behind this reasoning is the recognition that governmental intervention tends to make the nation's industrial constitution fragile. It can be said that this recognition itself is correct when judged from the case of the petroleum industry.

What are the structural weaknesses of Japan's petroleum industry viewed from an international perspective? On this question, Tomoaki Saito pointed out as follows, in 1990:

"Japan's oil companies are said to be handicapped in the very industrial constitution as compared with oil companies in America and European countries. That is, this observation comes from the thought that the oil business requires vertical integration to ensure a stable and solid business management. Leading oil companies in America and European countries let operating profits from their upstream operations support their downstream operations, while Japan's oil companies have only downstream operations in which operating profits are low. Besides, with 11 oil retailers and 29 oil-refining companies, the oil business in Japan has too many companies involved as compared with its market size, resulting in small market shares for each company. Oil companies in Europe have oil refining capacities more concentrated than in Japan, and in America, where oil refining companies are less concentrated than in Japan, the ratio of self-supplied petrol stations is higher, allowing each company to enjoy a higher market share in different market areas. In Japan, most oil retailers each have nationwide operations. The background of this unfavorable industrial structure as compared with other countries has

combined with Japan's own built-in business constitution to make the country's petroleum industry unable to eliminate a state of chronic excessive competition."³

In other words, Saito pinpointed two structural weaknesses in the Japanese oil business. Specifically, a lack of vertical integration leads to the separation of the upstream operations (exploration and production) from the downstream operations (refining and distribution) and a "structure of excessive competition" in the downstream sector where Japan's major oil companies operate. This "structure of excessive competition" is the fact that there are too many oil companies of too small a size. In Japan's petroleum industry, too large a number and too small a size of oil companies exist not only in the downstream but also in the upstream to the same serious degree.

What is the origin of the fragility of the petroleum industry in postwar Japan, as summed up by the two points of "separation between upstream and downstream" and "too large a number and too small a size of oil companies"? One easily realized factor is the limitations imposed by foreign capital. As shown in Table 1, in the four immediate postwar years between 1949 and 1952, Japan's petroleum industry entered into one agreement after another with Anglo-American oil companies mostly subsidiaries of the oil majors⁴, for alliances with foreign capital. As a result of those agreements, Japan's oil companies adopted a domestic refining system which allowed the Anglo-American oil companies, as the partners in the alliance agreements to supply Japan's oil refineries with crude oil. That is to say these alliance agreements resulted in Japan's oil companies operating mostly downstream, thereby contributing to the separation between the upstream and downstream operations of Japan's petroleum industry.

<Table 1>

However, it may be incorrect to make too much of the restrictions imposed by foreign capital as the factor responsible for the fragility of Japan's petroleum industry. A series of

alliance agreements with foreign capital has nothing to do directly with the excessive number of Japan's oil companies and their small size.

Considering the following three facts, the limitations imposed by foreign capital on Japan's petroleum industry can be regarded as not necessarily a decisive factor in the separation between upstream and downstream operations. (1) Since 1962 when the Petroleum Industry Law was enacted, the ratio of foreign affiliates in Japan's petroleum industry has declined, due to the growth of indigenously owned oil companies. (2) Since the middle of the 1960s, especially after the oil crises in the 1970s, the Anglo-American oil companies which have alliances with Japan's oil companies have been playing relatively diminishing roles in supplying crude oil to Japan's oil refineries as a reflection of the diminishing influence of the majors in the world market. (3) Since 1978, some of the alliances have been terminated⁵, including, for instance, Caltex having withdrawn from the Japanese market in 1999⁶.

If this is so, what brought about the fragility of Japan's petroleum industry? The answer to this question should lie in the way the government involved itself in the petroleum industry.

2. Separation between upstream and downstream

It was the Petroleum Industry Law instituted in 1962 that played a great role in bringing about the separation of the upstream and downstream sectors, which represents the first feature of the fragility of Japan's petroleum industry. The major provisions of this law include: (Article 3) the Minister of International Trade and Industry draws up oil supply plans; (Articles 4 through 6) a business wishing to engage in the oil refining industry is subject to government approval; (Article 7) new or increased capacities of the designated oil refining facilities are subject to government approval; (Articles 10 and 12) both oil products production plans and oil import plans must be submitted to the government for declaration; and (Article 15) when needed, the Minister of International Trade and Industry sets standard prices for petroleum products. In brief, the law aims to ensure a stable oil supply by controlling the oil refining industry.

Noteworthy here is the fact that, in a meeting of the Energy Council which was set up in 1961 as an advisory organ for the Minister of International Trade and Industry and which played an important role in working out the Petroleum Industry Law, Yoshitaro Wakimura as a member of the council stated his minority opinion as follows:

"There is no need for this law to be instituted as the ample business shares under government influence are secured even now and they are unlikely to decline in future. Rather, it is feared that control by law would help reduce the business shares. As for measures to ensure a stable oil supply, the phase we are going through now does not focus on the oil refining industry. Instead, now seems to be the time to make a comprehensive assessment of crude oil production and the availability of oil tankers."⁷

Wakimura disagreed with the majority opinion that attention be focused on the oil-refining sector (downstream sector), pointing out the importance of the oil production sector (upstream sector) and the transportation sector and thereby denying the need for the petroleum industry law itself. This minority opinion by Wakimura, however, ended up being ignored. The Petroleum Industry Law, which was instituted in accordance with the majority opinion at the Energy Council meeting, legalized the measure to focus governmental control on the oil refining sector, helping cement the separation of the upstream and downstream sectors of Japan's petroleum industry⁸.

3. Too many, too small oil companies

The way the government involved itself helped to solidify the separation of the upstream and downstream sectors as one aspect of the fragility of Japan's petroleum industry, as is the case with the petroleum industry law. What brought about the fact of many and too small oil companies as another aspect of the fragility of the Japanese petroleum industry? Let me state my conclusions first. With this aspect also, it appears that the way the government involved itself meant a lot. Before going about proving this point, let me confirm the fact that Japan's petroleum industry has too many oil companies.

In 1997, Japan's entire petroleum industry had total reserves of 4,461 million barrels of oil and 12 trillion cubic feet of natural gas, produced 683 thousand barrels per day of oil and 1,646 million cubic feet per day of natural gas, and had 5,323 thousand barrels per day of oil refining capacity and 4191 thousand barrels per day of oil products sales⁹. Compared with the respective figures in Table 2, these figures for the Japanese petroleum industry show the following facts. Taking all the oil companies together, the Japanese petroleum industry has: (1) an upstream sector (see the total figures of its oil reserves, natural gas reserves, oil production, and natural gas production) of a size almost equal to that of any one (Elf or Total-Fina or ENI) of the national flagship oil companies (which will be dealt with in detail later, in Section IV) in Europe's non-oil-producing countries, and (2) a downstream sector (see the total figures of its oil refining capacity and oil products sales) of a size nearly equal to that of one of the oil majors.

<Table 2>

If the upstream and downstream operations of Japan's petroleum industry were each integrated into one oil company, such a company each would have a size on a par with the world's top class. In reality, however, there are too many oil companies operating upstream and downstream in Japan. Taking the downstream sector, as of 1998, the number of Japan's oil refining companies and retailers together was 29 as shown in Table 3. Taking the upstream sector, there are obviously too many companies operating. In Japan, an oil company which is launching into upstream operations is eligible for government investment and financing through Japan National Oil Corporation (which is Japan Oil Development Corporation established in 1967 and renamed in 1978 with its commencement of oil reserve related business). As shown in Table 4, parent companies (private-sector companies as largest shareholders) of projects¹⁰ with financing from Japan National Oil Corporation and other companies financed by Japan National Oil Corporation indeed total as many as 28 as of the 1997 yearend. Too many Japanese oil companies leads to too small a size. This situation, coupled with the separation of

the upstream and downstream operations as another factor, accounts for the reality that none of Japan's oil companies is among the world top 50 as pointed out in Table 2.

<Table 3>

<Table 4>

When the subject of "too many, too small Japanese oil companies" in Japan's downstream sector is discussed, the term "excessive competition" is often used. Factors often cited as responsible for this "excessive competition" include: (1) surplus capacity for oil refining, (2) production and sales gaps (oil refining capacity exceed sales capability), (3) distortion of the oil products pricing system (to be more specific, gasoline alone is priced far above the other oil products), and (4) too many independent petrol stations¹¹. Of primary importance among these four are (1) and (2), which are closely related. What contributed most significantly to making these two factors tangible was the fact that in applying the Petroleum Industry Law, favorable policies in the approval of new or additional oil refining capabilities were considered for those indigenous oil companies, such as Kyodo Oil, which do not have adequate sales capabilities. It can be said "too many, too small oil companies" in Japan's petroleum industry became a reality in close connection with governmental involvement and intervention.

In Japan's upstream sector, the situation is not much different. The upstream sector, which consists of oil exploration and oil production operations, suffers from the structural problem characterized by the "rampant presence of small-sized oil development companies" and "business operations with a focus slanted on oil exploration". The former problem, to put it differently, can be said to be "too many, too small oil companies operating upstream". This was caused by the fact that the investment and financing by Japan National Oil Corporation in oil exploration companies under the Japan National Oil Corporation Law (the Japan Oil Development Corporation Law instituted in 1967 was renamed upon the 1978 revision) was meant to meet the principle of equal opportunities, which would lead to the presence of

small-sized oil companies¹². The latter problem also came from the fact that in its selection of investment and financing targets, Japan National Oil Corporation gave priority to exploration of new oil fields rather than to the purchase of existing fields. The fragility of the upstream of Japan's petroleum industry also came tangible in close relationship with government involvement.

As evident from the discussion so far, government involvement under the Petroleum industry law and the Japan National Oil Corporation Law was the factor which helped to cause structural problems. This helped to solidify the separation of upstream and downstream operations in Japan's petroleum industry (to put it differently, to block the progress of vertical integration) and to bring about the "too many, too small oil companies". The cause-and-effect relationship, as one ground for deregulation, whereby governmental involvement may lead to the fragility of the targeted industry can also be confirmed with Japan's petroleum industry.

4. Downward spiral of government involvement and industry fragility

It would be problematic to point out the above perspective alone. For between government involvement and industry fragility, there is not only the relationship of the former defining the latter, but there is also the relationship of the latter defining the former. To come to grips with the "relationship of the industry fragility defining government involvement", it is necessary to take a wider view of the actual situation of Japan's government-industry relationship.

One thing of help in assessing the actual state of the government-industry relationship is the question of why, even between industries of similar developmental phases which are under the jurisdiction of the same ministry or government agency, there are different degrees of governmental involvement offered¹³. In addition, the most suitable clue to answering this question can be obtained by making a comparison of the Electric Power Industry Law and the Petroleum Industry Law which apply to the electric power and petroleum industries respectively, for which the developmental stages are not widely different.

The Electric Power Industry Law and the Petroleum Industry Law have many things in common. Both are under the Ministry of International Trade and Industry (MITI), both concern an energy industry of a high degree of public interest and include provisions involving regulations relating to public interest, both are individual industry laws with limited scope of application to the particular industry, and both were introduced more or less at the same time (the Petroleum Industry Law in 1962 and the Electric Power Industry Law in 1964). However, when viewed from the point of governmental roles, the two laws will be found to have almost contrasting differences.

The Electric Power Industry Law gave legal approval belatedly to the then existing electric power supply systems shared by nine private electric power companies¹⁴. In this manner, the Electric Power Industry Law can be regarded as inheriting the basic principle behind the 1951 reorganization of the electric power industry, which had abolished governmental control of the national electric power supply since 1939 and given birth to the electric power supply system by the nine private-sector electric power companies.

On the other hand, the Petroleum Industry Law aimed to continue and strengthen governmental involvement in the petroleum industry. Giving the government the right to approve new and additional capacities, make production adjustments, declare standard prices and do other things, this law provided "very strong means of administrative intervention in individual companies' business operations."¹⁵

The fact that the Electric Power Industry Law and the Petroleum industry law provide different roles to be played by government (MITI) helps to upset in the argument about the government-industry relationship. As long as one considers MITI's industrial policies from a one-sided perspective, as the conventional thought¹⁶ does, one cannot possibly give a logical explanation of the reasons for the different roles played by MITI. This goes to show that the approach of casting light chiefly on the government side alone to understand the government-industry relationship has its own limitations.

If the conventional approach, which focuses on the government role first, is

problematic, what are the alternatives? To state my conclusion first, the approach one should take to assess the government-industry relationship is to first focus on industry's capability for systematization and adjustment and then proceed to value the government role as supplementary to such capabilities of the industry. That is to say one should primarily illuminate the industry side, unlike the conventional approach which focuses on the government role.

In having the Electric Power Industry Law instituted, Japan's electric power industry showed leadership. Disagreement can be anticipated inasmuch as, with this industry as one where regional monopolies are ensured, it is easy to make adjustments within the industry to show such leadership. It should not be forgotten, however, that such regional monopolies were non-existent until 1931 with the electric power companies operating in rigorous competition with one another, and that the industry then had its own initiative to make adjustments. In 1928, Yasuzaemon Matsunaga, then Vice President of Toho Electric Power Co., Ltd. made known "A Personal View on Regulating the Electric Power Industry", which foresaw the reorganization of Japan's electric power industry 23 years before it took place. This shows how high a degree of adjustment capability the electric power industry had then. (Hence the leadership Matsunaga showed in having the reorganization of the electric power industry of 1951 instituted). In the process of instituting the Electric Power Industry Law (made effective as from 1965) after the regional monopolies were achieved, the electric power industry continued to pursue rationalization, which included making "thermal main, hydroelectric secondary" in the electric power source mix and "oil main, coal secondary" in the thermal generation fuel mix. Thus, the capability for systematization of the electric power industry which is capable of pursuing such rationalization efforts on its own was an important driving force behind the belated legal approval of the existing electric power supply system by the nine private-sector electric power companies under the Electric Power Industry Law.

In contrast to the electric power industry, Japan's petroleum industry did not show leadership in having the Petroleum Industry Law instituted. With this industry, part of the forces within the industry tried to take advantage of governmental intervention so as to contain

the forces of their competition. They include, for instance, foreign affiliate oil companies, which attempted to contain Idemitsu Kosan Co., Ltd. then enjoying growing sales. Those, which tried to exploit the Petroleum Industry Law, had also to comply with the provisions therein which worked against their own interests¹⁷. In this manner, the petroleum industry, which had insufficient capability for systematization and adjustment as compared with the electric power industry, was brought under the control of the Petroleum Industry Law that features governmental involvement.

The cases which have been examined with the Electric Power Industry Law and the Petroleum Industry Law offer important clues in addressing the issue of "why is it that there are small and large degrees of governmental involvement or meddling even between industries which belong to the same ministry or agency and are at similar stages of development?" The answer is that with an industry which is capable of systematization or adjustment, the government gets involved in a limited manner, while, with an industry which is not, the government tends to meddle in a big way. The Electric Power Industry Law represents the former whereas the Petroleum Industry Law exemplifies the latter. These parallels would apply to many industries other than the electric power and oil industries.

To sum up this discussion, what makes it likely for the government to get involved in a significant way is primarily that the industry in question has inadequate capability for systematization or adjustment. That is, fragility of the industry attracts governmental intervention.

This section has dealt with the relationship between government involvement in an industry and industry fragility, first pointing out the aspect where the former causes the latter and then the aspect where the latter generates the former. There is a kind of mutually amplifying reaction between the two, and, to put it differently, this means the two have a relationship characterized by a downward spiral. If the situation is left as it is, the industry fragility generates the government meddling, which in turn worsens the industry fragility, leading to further intervention by the government. This vicious circle could continue endlessly.

Government-regulated industries in Japan, including the petroleum industry, are in urgent need of breaking this vicious circle.

Now, when government intervention regresses in favor of deregulation in government-regulated industries like Japan's petroleum industry, what situation will occur on the industry side? Assuming that the relationship between government involvement and industry fragility is not one to be mutually amplified but unilateral with the former simply being the reason for the latter, conducting the surgical operation of introducing a market economy to the industry might have led directly to overcoming the industry fragility. As a matter of fact, however, the relationship between the two tends to be reciprocally amplified, making it likely that industry fragility generates the government intervention on the other hand. With this in view, is it safe to say that having the market economy introduced through deregulation (or having the government less involved) would really help strengthen the petroleum industry's inherently inadequate capability for systematization and adjustment? Let me examine this point below.

III. PROBLEMS OF DEREGULATION IN JAPAN'S PETROLEUM INDUSTRY

1. Process of deregulation

In order to determine whether the introduction of a market economy through deregulation would contribute to making adequate the industry's inherently inadequate capacity for systematization or adjustment, it is necessary to know how the deregulation effort has been going. An overview of the process recently made in the deregulation effort of the petroleum industry indicates that there are roughly three phases involved.

In the first phase, the five-year action plan was carried out in a phased manner on the basis of the June 1987 report of findings by a Petroleum Council, Petroleum Department Meeting, Sub-committee on Fundamental Problem of Oil Industry. The process of carrying out the five-year action plan included the following measures taken: flexible application of the permission for secondary equipment (July 1987), abolition of gasoline production quota (March 1989), abolition of the guidance on kerosene stockpiling (September 1989), abolition of the guidance on service station construction and on service station transfer (March 1990), flexible application of approval for primary equipment (June 1991), abolition of guidance on crude oil treatment (March 1992), and abolition of the fuel oil tariff quota system (March 1993.). This first phase provided the preliminary stage for the deregulation of the petroleum industry.

In the second phase, the deregulation of the oil distribution sector was carried out on the basis of the December 1994 final report of findings by a Petroleum Council, Petroleum Department Meeting, Sub-committee on Fundamental Problem of Oil Policy. The most important incident in this phase was the abolishment of the Provisional Measures Law on the Importation of Specific Petroleum Refined Products in April 1996 to liberalize the importation of specific petroleum refined products. This was followed by the abolition in October 1996 of the designated area system, which had new and additional petrol stations in check. Continuous progress was made in the deregulation of the oil distribution sector, including: the substantial liberalization of the export of petroleum refined products in July 1997, the abolition of the

primary oil supplier verification system in January 1998, and the liberalization of the manned self-service petrol station in April 1998. It can be said that the deregulation of Japan's petroleum industry began to progress in earnest during this second phase dealing with the oil distribution sector.

In the third phase, which is now in progress¹⁸, the deregulation which started in earnest with the oil distribution sector spread to the oil refining sector and to the oil exploration and production sector. The June 1998 report of findings by a Petroleum Council, Petroleum Department Meeting, Sub-committee on Fundamental Policy favored abolishing the petroleum supply-demand adjustment and control by the Petroleum Industry Law and proposed a fundamental review of the Petroleum Industry Law itself which defines what Japan's oil refining sector should be like. In June 1998, the criticism by then Minister of International Trade and Industry, Mitsuo Horiuchi helped to trigger "the Japan National Oil Corporation issue," with the result that the *raison d'être* of the corporation itself was questioned anew. Currently, in light of this situation the Petroleum Council, Development Department Meeting, Sub-committee on Fundamental policy¹⁹, which started in March 1999, is now considering what the oil exploration and production sector should be like.

The reason for the progress in the three-phased deregulation of Japan's petroleum industry as explained above was not the situational changes within this industry as an interior factor but the social climate clamoring for deregulation per se (or a kind of "outside pressure" in the eyes of the petroleum industry) which began to grow in the late 1980s. This can be seen from the examining processes of the 1994 Petroleum Council, Petroleum Department Meeting, Sub-committee on Fundamental Problem of Oil Policy which proposed abolishing the Provisional Measures Law on the Importation of Specific Petroleum Refined Products, and also from the examining process of the 1998 meeting of the same sub-committee which proposed a fundamental review of the Petroleum Industry Law. These two sub-committee meetings repeated the examining process characterized as follows. (1) Representative councilors from oil refining companies and oil retailers insisted on the continuation or practical succession of the

Provisional Measures Law on the Importation of Specific Petroleum Refined Products and of the Petroleum Industry Law. (2) The disagreements in opinion between the pro-abolition representatives and the anti-abolition representatives from the petroleum industry were not resolved. (3) Ultimately, a certain political judgement is relied on to work out abolition or fundamental reviews of laws and measures²⁰. The Petroleum Council, Development Department Meeting, Sub-committee on Fundamental Policy, which started in 1999 and is in session now, also saw senior members from Japan Petroleum Mining Association as best suited to represent the interests of the oil development companies, insisting that the investment and financing by Japan National Oil Corporation must survive and even be expanded, a scene which somewhat resembles (1)²¹. The situation in (1) above shows that the deregulation of the petroleum industry was not carried out by initiatives from within the industry. The above (2) and (3) strongly indicate that at each of the sub-committee meetings, the "outside pressure" worked, effectively making the political judgement prevail that "we must not let disagreements in opinion prevent deregulation from being carried out". It would be appropriate to consider that the deregulation of Japan's petroleum industry is pushed forward not by interior factors but primarily by exterior factors.

2. Lack of strategic reforms

Has this industry's deregulation driven by exterior factors and the retreat of the government's involvement helped foster the capabilities for systematization and adjustment of the petroleum industry with inherent insufficiency of these capabilities? Regrettably, the answer cannot but be negative as the present situation stands. The Japanese petroleum industry, which has hitherto been "used to being regulated", now finds itself unable to implement strategic reforms, instead, just focusing its attention on how to cope with the situational changes just emerging before it.

The "situational changes just emerging with the deregulation" with which the petroleum industry is confronted are, in short, its sharply declining operating profitability (How

the business results of Japan's oil refining companies and oil retailers are worsening can be seen from the 1998 company-wise results in Table 3. On the symptomatic responses to cure the Japanese petroleum industry suffering from worsening profitability, recent editions of the Oil Year Book and the Natural Resources & Energy Year Book state as follows.

"1995 Oil Year Book": "This series of deregulation measures is meant to provide a soft-landing for full liberalization. But as it stands, it is not making progress as intended, making it fairly likely that there will be a hard-landing."²²

"1997 Oil Year Book": "One year after the abolition of the Provisional Measures Law on the Importation of Specific Petroleum Refined Products, the petroleum industry's profitability showed sharp declines. For the year 1996, the operating profits of the 29 oil refining companies and oil retailers together were 114,259 million yen, down about 40% from 187,574 million yen for 1995, having narrowly avoided falling below the 100 billion yen level. This is the worst result since 1985."²³

"1997/1998 Natural Resources & Energy Year Book": "Since the 6th year of Heisei (1994) when abolition of the Provisional Measures Law on the Importation of Specific Petroleum Refined Products began to be discussed, competition intensified in anticipation of the forthcoming liberalization, resulting in significant declines in prices of refined petroleum products, which led to rapidly worsening business operations for each oil retailer."²⁴

"1998 Oil Year Book": "The intensified competition after the abolition of the Provisional Measures Law on the Importation of Specific Petroleum Refined Products led to widespread depression of the market, with reduced sales margins lowering operating profits and contributing to the rapidly worsening financial constitution of the oil business. The average ratio of operating profits to sales in 1997 was 2.77% for all industries and 3.92% for the manufacturing industries whereas that for the 29 oil companies together was merely 0.40%. ...The average ratio of operating profits to

total capital was 2.60% for all industries and 3.60% for the manufacturing industries whereas it was far below at 0.53% for the 29 oil companies. ...In the previous year (1996), the average ratio of operating profits to sales for the 29 oil companies was 0.73% and the average ratio of operating profits against total capital was 0.98%, both the lowest for all major industries. The year 1997 saw profitability fall further."²⁵

"1999/2000 Natural Resources & Energy Year Book": "The abolition of the Provisional Measures Law on the Importation of Specific Petroleum Refined Products led to sharp declines in gasoline prices and new entries by major distribution companies into the petrol station operation, causing the petroleum industry to face a rigorous business climate of intensified competition."²⁶

Confronted with a fast worsening business, which was made tangible by deregulation (especially the abolition of the Provisional Measures Law on the Importation of Specific Petroleum Refined Products), "Japan's oil refining companies and oil retailers were brought to the situation where they had to push ahead of others with corporate restructuring plans to maximize rationalization and efficiency so as to ensure profitability."²⁷ There was some degree of progress seen in the petroleum industry's reorganization, as is the case with the April 1999 merger of Nippon Oil Co. and Mitsubishi Oil Co. (the birth of Nisseki Mitsubishi). But as a whole, the behavior of Japan's oil companies in the past several years has never exceeded the scope of symptomatic reactions. This is why the answer to the question: "Have the deregulation of the industry and the retreat of the government's involvement helped foster the capabilities for systematization and adjustment of the petroleum industry with inherent insufficiency of these capabilities?" has to be negative for now.

As has been discussed, currently Japan finds itself in a suffocating blockade where some deregulation is being implemented and yet radical reform is not progressing. What needs to be done to progressively break this blockade is not to stop the on-going deregulation effort or to assume the bland attitude that "it is sufficient if a semblance of deregulation is achieved."

Then, what is the choice of direction Japan's petroleum industry should take from now? To go on following the direction it chooses, how should deregulation of the industry be pursued? To answer these questions, it is necessary to recall the lessons from the experiences of foreign oil companies.

IV. EXPERIENCES OF FOREIGN OIL COMPANIES

1. The present situation of the world's petroleum firms

Table 2 referenced above shows the world ranking of the top 50 oil companies in 1997 on the basis of information in PIW (*Petroleum Intelligence Weekly*). The ranking in this table is an over-all view made available by ranking the 50 largest oil companies by each of the six factors of oil reserves, natural gas reserves, oil production, natural gas production, oil refining capacity, and oil products sales, and then applying the average figures for ranking. The table shows that the world's major oil companies are of three types.

The first type includes the so-called "oil majors," consisting of Anglo-Dutch Royal Dutch Shell (No.3 on the over-all scale), America's Exxon (No.6), Mobil (No.7), Chevron (No.11), Texaco (No.13), UK-based BP (No.10). Four (oil reserves, natural gas reserves, oil production, natural gas production) of the six factors used in the average ranking figures in this table concern the upstream sector, making for the tendency that oil companies operating in the upstream sector are ranked high. If only the two factors (oil refining capacity and oil products sales) which concern the downstream sector are considered for the ranking figures, the oil majors will be ranked still higher, (making Royal Dutch Shell No.1, Exxon No. 2, Mobil No.3, BP No.5, Texaco No.7, and Chevron No.9²⁸), all in the top ten.

The second type covers state-owned oil companies of oil-producing countries such as Saudi Aramco (No.1 on the over-all scale), Venezuela's PDVSA (No.2), Iran's NIOC (No.4), Mexico's Pemex (No.5), Kuwait's KPC (No.8), Indonesia's Pertamina (No.9), Algeria's Sonatrach (No.12). These firms are major players no less strong than the majors, with some in the top ten even in the downstream sector (PDVSA No.4, Saudi Aramco No.6, Pemex No.8).

The third type includes state-influenced oil companies of non-oil-producing countries such as Italy's ENI (No.18 on the over-all scale), France's Total (No.20), Elf (No.21, called "Elf Aquitaine" to be more precise). Of these, Total has newly organized as Total Fina in 1999 after having acquired Petrofina. If Total Fina had existed in 1997, it would have ranked No.11 next

to Chevron (See Table 2). Also in 1999, it was announced that Total Fina was planning to acquire Elf Aquitaine. If this plan is realized, a state-influenced oil company of a non-oil-producing country will likely emerge which ranks among the world's top ten.

As discussed here, the world market for oil and natural gas includes the three types of oil companies, namely the majors, state-owned oil companies of oil-producing countries, and state-influenced oil companies of non-oil-producing countries, all playing important roles²⁹. Of these, state-owned/influenced oil companies of oil-producing countries and of non-oil-producing countries are based in countries where the majors are not headquartered. Often they are both collectively called national flagship oil companies. This paper takes up only the majors and state-influenced oil companies (national flagship oil companies) of non-oil-producing countries as subject for consideration³⁰.

2. Profits origin of oil majors

The experience of the majors and the national flagship oil companies of non-oil-producing countries will give us important lessons in connection with the choice of direction for Japan's petroleum industry. First, profits origin of the oil majors shows significance of the upstream sector.

Table 5 shows each oil major's net profits by business sectors for the three years between 1996 and 1998. As this table indicates, in all six companies in the table the net profits from the upstream sector in 1996 and 1997 significantly exceeded those from the downstream sector. Then, affected by declines in crude oil prices since December 1997, each company's net profits from the upstream sector declined sharply in 1998. Yet, in three out of the six companies the net profits from the upstream sector continued to exceed those from the downstream sector. These facts indicate the importance of the upstream sector in terms of profit for the oil and natural gas industry.

<Table 5>

It is noteworthy here that the upstream sector is the "money-maker" for the oil and natural gas industry worldwide as a whole. With the oil majors, this sector accounts for a large share of their net profits.

3. Economic independence of national flagship oil companies in non-oil-producing countries

(1) Total³¹ and Elf³² of France

To clarify the choice of direction for Japan's petroleum industry, it will be also of help to examine what process was used to develop in other non-oil-producing countries. In this part, let us look back on the process of developing typical national flagship oil companies and thereby derive useful lessons for Japan. I would like to take up Total and Elf of France, ENI of Italy, Repsol of Spain, and Deminex of Germany.

In France, CFP was set up in 1924, with funding from major banks and oil companies, to inherit and operate the 23.5% equity of the former Iraq Oil (then called Turkey Oil) which defeated Germany had owned. The French government started in 1929 to directly invest in CFP, with its investment in CFP reaching 35% of the equity till 1931. Having secured a foundation with the discovery of the Kirkuk oil field in 1927, CFP successfully obtained from the French government sales quotas for domestic marketing of petroleum products and became an integrated oil business. After the Second World War, CFP did well in exploring and producing oil and natural gas in Algeria, Iran, UAE and other countries. CFP changed its name to Total in 1991.

While CFP (later to be called Total) was active in the world market for oil and natural gas as an equal to the oil majors, France saw another national flagship oil company emerged. This was Société Nationale Elf Aquitaine (SNEA) which came into existence as a result of a merger between SNPA and Elf/ERAP in 1976 and was 67% owned by the French government. SNPA, the precursor to SNEA, made the most of hydrocarbon subsidies from the French

government, thereby discovering the domestic Lacq gas field and large-scale oil-gas fields one after another in Algeria, Gabon and other countries, thus securing a business operating foundation. On the other hand, ELF/ERAP also made use of hydrocarbon subsidies to establish overseas operations in the upstream sector. This company was also active downstream with the French government's favored arrangements on petroleum products sales quotas³³. The birth of SNEA from a merger between SNPA and Elf/ERAP meant the emergence of another national flagship oil company with integrated operations ranging from oil exploration and production to oil refining, petrochemicals and sales. SNEA changed its name to Elf Aquitaine in 1994.

The main goal behind the establishment of SNEA (later to be called Elf Aquitaine) was to employ the earnings from the Lacq oil field for overseas oil exploration. This goal was richly rewarded. In a short period just after its birth in 1976, SNEA discovered one oil-gas field after another in countries like Nigeria, Congo, and Angola in West Africa and also in the North Sea. The good track record of SNEA was enough for the French government to discontinue the exploration subsidies to SNEA in 1986.

In France, since the middle of the 1980s, the privatization of SNEA (Elf Aquitaine) and Total has been in progress. The French government started a phased sell-off of its equity in Elf Aquitaine in 1986 and of Total in 1992. The French government owned equity in 1996 was reduced to 0% of Elf Aquitaine's equity and to 1% of Total's³⁴.

In 1999, Total acquired Petrofina and became Total Fina. In the same year, Total Fina announced plans to acquire Elf Aquitaine.

(2) ENI³⁵ of Italy

In Italy, the state-owned oil company AGIP and the gas supply company SNAM were integrated in 1953 to create the 100% state-owned holding company ENI (As a result, AGIP and SNAM became subsidiaries of ENI). With the exclusive rights for on-shore gas exploration, ENI made rapid progress by developing natural gas fields on the Po basin. The company has

discovered oil and gas fields in Egypt, Iran and other foreign countries since the late 1950s. As a result, ENI's operating income-expenditure balance improved, enabling ENI to contribute to the Italian government's finances in the 1960s. "Until the end of 1960s, ENI found itself an integrated international oil company producing 10 billion m³/yr of indigenous gas, 10 million tons a year of crude oil from its overseas operations in Africa and the Middle East, and 35 million tons a year of petroleum products. It became also a large conglomerate, one of the champions of Italy's business world, with many subsidiary companies, which engaged in pipeline and plant construction, machinery manufacturing, textile production and so on"³⁶. The Italian government took an equity position in ENI but did not give it subsidies.

As part of its preparation for the EU unification, the Italian government in 1992 announced plans to make phase the privatization of ENI, starting to sell off stocks in ENI in 1995, with its equity in ENI lowered to 37% in 1998.

Upon acquiring AGIP in 1997, ENI transformed itself from a holding company to a business operating company as an integrated international oil and natural gas company. The major overseas countries in which ENI produced crude oil in 1997 included Egypt, Libya, Nigeria, Congo, Angola, and the UK.

(3) Repsol³⁷ of Spain

In Spain in 1987, Repsol was established as a state-owned integrated company, handling oil and gas exploration, oil refining, petrochemicals, and sales. Repsol was created as a result of the integration of many state-owned firms operating sector-wise under INH (Hydrocarbon Corporation).

The objective behind the establishment of Repsol by the Spanish government was to quickly provide an internationally competitive national flagship oil company in response to the 1986 entry into the EC. Therefore, Repsol was given the following two conditions: that government subsidies should be discontinued in 1990; and that Repsol should be privatized

within ten years.

Given these conditions, Repsol chose to (1) aggressively pursue the acquisition of discovered and existing oil fields and (2) pursue oil exploration only in low-risk areas in already-oil-producing countries. As for (1), in several years since its establishment Repsol acquired oil-producing assets in Indonesia, Colombia, the UK, and Egypt. As for (2), Repsol proceeded to explore for oil mostly in the Middle East where Repsol had laid the foundation under the former name of HISPANOIL and in the North Sea and Algeria. As a result, Repsol steadily progressed to become an internationally competitive national flagship oil company. The good track record of this company's growth as a national flagship oil company is amply shown by the fact that the Spanish government's subsidy payments were completed in 1990 as planned, that INH-owned equity in Repsol was sold off to the private sector in steps, making Repsol a genuine private-sector company in 1997, and that Repsol was listed on the New York Stock Exchange in 1994.

(4) Deminex³⁸ of Germany

In Germany, obliged by the "1964 Protocol for the Creation of Energy Common Market" of EEC/ECSC to remove its import duties on crude oil and to abolish tax returns for domestic oil-producing firms by 1969, the government of West Germany introduced a system to provide subsidies for overseas oil-producing operations by West German oil-producing firms. As the organ to handle this, Deminex was created in 1969 as a result of the horizontal integration of all West German national oil companies operating upstream (specifically, Deminex was a limited company jointly owned by eight national oil companies in the upstream sector).

The West German government gave Deminex time-limited subsidies three times between 1969 and 1989. Those subsidies included subsidies after 1974 for acquiring oil-producing assets including discovered oil fields. Making the most of these subsidies, Deminex proceeded to buy oil fields in the North Sea and established an operating foundation by drawing on its oil production from those fields. Furthermore, Deminex had good results in

its exploration operations in countries such as Syria, Argentine, and Egypt. Drawing on these, Deminex achieved self-reliance by 1989, when government subsidies were discontinued. Seven years later, in 1996, Deminex's oil production was 186 thousand barrels a day and its natural gas production was 299 million cubic feet a day.

Financial independence having been achieved, Deminex in 1998 was dissolved with its assets and business operations inherited by its three equity holders (VEBA Oel, RWE-DEA, and Wintershall³⁹). Of these, VEBA Oel is a representative firm as Germany's national oil company, and Wintershall is a subsidiary of the world-renowned chemical company BASF of Germany. RWE-DEA is a chemical and oil company came into existence in 1988 as a result of RWE (Rhine-Westphalia Electric Company) having bought Deutsche Texaco from Texaco, which had decided to get out of Germany. The emergence of RWE-DEA made it possible for the assets and business operations of Germany's distinguished oil company DEA, which had been bought by Texaco, to again be part of Germany's national oil company.

Among national oil companies of Europe's non-oil-producing countries, Germany's Deminex was exceptional in that it operated exclusively upstream. However, all three companies, VEBA Oel, RWE-DEA, and Wintershall, which inherited Deminex's assets and business operations upon its dissolution are vertically integrated, operating upstream as well as downstream.

(5) Factors to achieve economic independence

What is remarkable here is that all of the national flagship oil companies of non-oil-producing countries as discussed in this part achieved economic self-reliance. On this score, a report by the Research & Planning Department, Japan National Oil Corporation says that "with Deminex having joined the pack as the latest comer, all the oil companies achieved constant operating profits whereas Total, Elf, and ENI-AGIP have grown in size to be a presence next to the conventional seven majors, no longer in need of government financial support"⁴⁰. According to the report, the net returns on capital in 1996 were 4.7%, 5.4%, 19.6%, and 27.2%

for Elf, Total, ENI and Deminex respectively⁴¹. Also with Spain's Repsol, the Spanish government's subsidies for exploration were discontinued in 1990 as the company's financial status improved⁴².

Many of Japan's oil development companies still depend on Japan National Oil Corporation for financing, and, in contrast, the national flagship oil companies of Europe's non-oil-producing countries have achieved economic independence. Why is that? For a start, two reasons can be cited: (1) except for Deminex, they are vertically integrated companies operating both upstream and downstream, as the majors are; and (2) they are horizontally integrated including Deminex.

The 1996 report by the Information Center for Petroleum Exploration and Production emphasizes as a reason for their economic independence that the national flagship oil companies of Europe's non-oil-producing countries aggressively pursued the purchase of discovered oil fields, thereby securing their core areas⁴³. According to the report, the core area is "an area which accounts for a significant share of the company's total oil production for a fairly long period of time, contributing significantly to the consistent operating incomes of the company as well as providing funds for the company's exploration efforts in other areas"⁴⁴. At present the core areas are West Africa and the North Sea for Elf, the Middle East and Indonesia for Total, North Africa and West Africa for ENI, and the Middle East and the North Sea for Repsol (the North Sea and Syria for Deminex, which was dissolved in 1998)⁴⁵.

In Europe's non-oil-producing nations, government involvement in the petroleum industry was phased out and deregulation progressed in a manner to emulate the economic independence achieved by the national flagship oil companies⁴⁶. As mentioned earlier, in France the sell-off of government-owned equity to the private sector started after 1986 for Elf and after 1992 for Total, with the French government having an equity as low as 0% of Elf and 1% of Total in 1996⁴⁷. In Italy, in light of the 1992 decision to privatize, phased selling of ENI's stocks was made beginning in 1995 so that the Italian government-owned equity in ENI was lowered to 37% at the end of 1998. In Spain, ten years after Repsol was created in 1987

the policy in favor of its privatization was worked out and portions of its stocks were sold off several times since 1992 so that Repsol became a genuine private-sector company in 1997. In Germany, the subsidies for Deminex were discontinued after 1989, and in 1998 Deminex was disbanded with its business operations inherited by the three private-sector oil companies (VEBA Oel, RWE-DEA, and Wintershall).

The regression of governmental involvement (deregulation) in the petroleum industry of Europe's non-oil-producing countries was not pursued with the thought that "all that needs to be done is simply to achieve deregulation." The phasing out of governmental involvement in Europe started after the prerequisite for privatization, that is, the economic independence of national oil companies, was sufficiently achieved. This contrasts with the Japanese case, where the deregulation of its petroleum industry was encouraged by exterior factors backed by "foreign pressure".

In some of Europe's non-oil-producing nations, there was an interesting phenomenon. That is, governmental involvement (support) in the petroleum industry was supposed to be of limited duration and such government involvement (support) was made the most of, so that the corporate constitution of the domestic oil companies might be sufficiently strengthened by the time such governmental involvement (support) was due to expire (what happened in Germany was case in point for this phenomenon, which will be dealt with in detail later, in Section V).

The experience of the national flagship oil companies of non-oil-producing countries, as I have outlined, will give us important lessons in connection with the choice of direction for Japan's petroleum industry. What these lessons show us can be summarized in the following four points. (1) Vertical integration should be pursued for business operations both upstream and downstream. (2) Horizontal integration should also be pursued both upstream and downstream. (3) In the upstream, strategic operations for the business should be made, including the purchase of discovered oil fields, to ensure the core areas. (4) Governmental involvement (support) should have a limited duration and such government involvement (support) can be effectively exploited to strengthen the petroleum industry's constitution.

V. CHOICE OF DIRECTION JAPAN'S PETROLEUM INDUSTRY SHOULD TAKE

1. Promotion of vertical integration

The lessons which have been learned from the experiences of non-oil-producing countries' national flagship oil companies indicate the above four points. In this section I would like to elaborate on these points one by one and thereby shed light on the direction Japan's petroleum industry should choose.

Let us take up (1) the promotion of vertical integration. Of importance here is the fact that as Table 2 above shows, each of the oil majors and many national flagship oil companies in non-oil-producing countries operate in the upstream sector (see Table 2 for oil reserves, natural gas reserves, oil production, and natural gas production) as well as in the downstream sector (see Table 2 for oil refining capacities and oil refined products sales) whereas Japan's major oil companies virtually focus their operations on the downstream alone. Saito was drawing on this fact when he pointed out: "Leading oil companies in America and European countries let operating profits from their upstream operations support their downstream operations, while Japan's oil companies have only downstream operations in which operating profits are low".

The fact that major Japanese oil companies have their business operations concentrated on the downstream, not operating in the "money-making" upstream sector is one of the factors responsible for the fragility of Japan's petroleum industry. Therefore, the most important factor in strengthening the constitution of Japan's petroleum industry is the creation of vertically integrated oil companies operating in both the upstream and downstream sectors⁴⁸.

What requires careful attention here, however, is that those companies which need to pursue vertical integration are limited mostly to oil companies operating in the downstream (as exemplified by oil refining companies and oil retailers). Japan's petroleum industry also features oil companies, although not majors, operating in the upstream with no need to join the

"low-profitable" downstream.

2. Promotion of horizontal integration

Let us now look at (2) the promotion of horizontal integration. As discussed in Section II, in the upstream sector the size of Japan's entire petroleum industry almost equals that of one of the national flagship oil companies in Europe's non-oil-producing countries. In the downstream sector, the combined size almost equals that of one of the oil majors. Nevertheless, parent companies (private-sector companies as largest share holders) of projects with financing from Japan National Oil Corporation and other companies financed by Japan National Oil Corporation indeed totaled as many as 28 as of the 1997 yearend. In the downstream sector as well, the situation is that 11 oil retailers and 29 oil refining companies is just too large a number as compared with the market size.

With the progress of deregulation, in the downstream sector of Japan's petroleum industry as exemplified by the birth of Nisseki Mitsubishi, the horizontal integration of oil companies is making gradual progress. In the upstream sector, however, there are no tangible moves as yet for horizontal integration. Too large a number of oil companies leads to the dispersion of business management resources, the lowering of fund-raising capabilities, the diminishment of bargaining powers, and smaller potential for strategic action, making one of the large structural weaknesses suffered by Japan's petroleum industry. To strengthen the business constitution of Japan's petroleum industry, it is necessary to pursue horizontal integration not only in the downstream but also in the upstream⁴⁹.

3. Strategic operation of the business

Let us continue on to (3) strategic operation of the business. This can have an important meaning in the upstream sector of the petroleum industry. As examined in Section IV, because they aggressively pursued the purchase of existing oil fields and thereby succeeded in securing core areas, many national flagship oil companies in Europe's non-oil-producing

countries achieved economic independence. On the contrary, Japan's oil exploration companies favored exploring new oil fields along the investment and financing policies of Japan National Oil Corporation, assuming a non-aggressive attitude toward purchasing existing oil fields. In other words, the upstream sector of Japan's petroleum industry suffers from the structural problem of biased focus on high-risk oil exploration.

To resolve this problem, it is necessary to provide Japan's oil exploration companies with such business management environment as to be able to operate their business strategically, including the purchase of existing oil fields and thereby create the core areas. The point in doing so is that the purchase of existing oil fields be included among the targets for investment and financing by Japan National Oil Corporation and that the horizontal integration of the upstream oil companies be promoted to enhance the possibilities of strategic business action.

4. Phasing out of government's involvement

Of much significance with respect to (4) the government's role, is the way the German government was involved with Deminex. Partly because Deminex was disbanded in 1998 with its business operations split into and inherited, Germany cannot be said to now have national flagship oil companies. Nevertheless, it is an indisputable historical fact that Deminex, which was created in 1969 two years after the birth in Japan of Japan Oil Development Corporation (later to be renamed Japan National Oil Corporation), had achieved economic independence from governmental financing before it was disbanded. Comparing this with the case of Japan, the 1996 report by the Oil Development Information Center says:

"When the German subsidy system exemplified by Deminex is compared with the overseas oil exploration and development subsidy system in Japan, there are the following differences:

- Domestic crude oil producers as the target companies for government subsidies were first integrated into a new company (that is Deminex - remarks by the author), which was subsidized by the German government.
- At first, as was the case with Japan, the German subsidy was to finance oil exploration, to be

repaid upon success. However, differing from the Japanese case, it was an interest-free and to be converted into subsidies immediately after the project was deemed unsuccessful.

- The providing period and the sum total of the subsidies were limited. This idea was based on the principle that the subsidized companies must eventually develop self-reliance. To make up for that, there were no goals set for the amount of oil production.
- Upon the expiration of the subsidy period, the German government responded in a manner fitting the actual situation in consultation with the shareholders. In doing so, the subsidies financed not only oil exploration but also purchase of crude oil assets⁵⁰.

Items of special importance here are: the German government's involvement in the petroleum industry helped realize the horizontal integration of its upstream sector, bringing Deminex into existence; the subsidies to Deminex had a limited time of duration from the beginning, assuming that Deminex would eventually acquire economic independence⁵¹; and the subsidies also targeted the purchase of existing oil fields. The German government's involvement with Deminex exemplified that it is effective to make the government involvement (government support) of limited duration, then let the subsidized companies make the best use of it, until it expires, so as to strengthen the business constitution of the petroleum industry.

To repeat again, the direction Japan's petroleum industry should choose may be found among the following: to develop vertically integrated companies, to pursue horizontal integration, and to operate strategically, including the purchase of existing oil fields. Needless to say, the necessary driving force lies with management effort by the oil company itself. However, it cannot be said that there is no room at all for government intervention. As the German case illustrates, government involvement can be effective if given in a sufficiently sophisticated manner that limits its duration and allows exploitation by the industry until it expires so as to effectively reform the industry. As discussed earlier, in Japan the Petroleum Council, Petroleum Department Meeting, Sub-committee on Fundamental Policy, which started in March 1999, is now considering methods of structuring government support for oil exploration and production. If the German government's involvement with Deminex is

emulated, the correct manner to resolve the Japan National Oil Corporation issue is almost in sight.

VI. CONCLUDING REMARKS

This paper has highlighted case studies made with the petroleum industry to examine what the deregulation of Japan's government regulated industries means and what problems it faces. The results of these studies can be summed up as follows.

First of all, there is a kind of mutually intensifying effect between government involvement and industry fragility, creating a downward spiral between the two. In considering industrial deregulation, it is imperative that not only the aspect of industrial regulation causing the industry's fragility ([a] side) be examined, but also the aspect of industry fragility conversely generating government involvement ([b] side) be studied.

Second, in the so-called regulated industries where the above-mentioned mutually amplifying effect is exemplified, it follows that any progress of deregulation made by exterior factors will not necessarily lead directly to strengthening the business constitution of the industry concerned. The cause of this phenomenon is found on the [b] side of the mutually amplifying effect. In many cases, the companies comprising the regulated industries are not strong enough to endure surgical operation, that is the introduction of a market economy.

Third, to make the deregulation of the regulated industries truly meaningful, it is necessary that the implementation of deregulation be sophisticated enough to effectively induce the strengthening of the business constitution of the industry. The effective way is to limit the duration of the regulation (including government financial support), and then let the regulated companies exploit the governmental involvement (support) till it expires, to help strengthen their business constitution.

As cited as the second implication, currently most of Japan's regulated industries are in a type of bottleneck characterized by the combination of on-going deregulation and no progress in radical reform. To break this bottleneck does not mean calling off the on-going deregulation (Policy A) or continuing the common assumption that "it is sufficient if a semblance of deregulation is achieved" (Policy B). Policy A ignores the [a] side of the mutually amplifying

effect mentioned earlier. Policy B makes light of the [b] side. To make deregulation of the regulated industries truly meaningful, a practical and flexible way of thinking must be employed whereby government involvement is exploited within a limited period of time while, at the same time, efforts are made to strengthen the industry concerned.

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NOTES

¹ See page 15 of [Kikkawa, 1998c] for the argument that the market-centrism, which pronounces deregulation and has increased its influence in Japan, lacks in specific and constructive vision.

² In a discussion on industrial policies, using the analysis point based on the dualistic theory of the government vs. the market is not feasible. It is important to view the oil company as a player. First, examine the relationship between the market and the company, then determine the role of the government according to that relationship. This analysis process is required to deepen the understanding of industrial policies. See [Kikkawa, 1998b].

³ [Saito, 1990] pages 266-267.

⁴ Stanvac is a subsidiary of Standard Oil of New Jersey (later Exxon) and Socony-Vacuum (later Mobil). Caltex is a subsidiary of Standard Oil of California (later Chevron) and Texaco. Shell is a subsidiary of Royal Dutch Shell.

⁵ Union and Gulf retreated from the Japanese market in 1978 and 1980 respectively. Getty sold off its equity in Mitsubishi Oil to each of the Mitsubishi groups involved. In 1995, Caltex terminated its alliance with Nippon Oil, selling out its equity in Nippon Oil Refining in 1996 (a company jointly-owned by Caltex and Nippon Oil).

⁶ Caltex sold its equity in Koa Oil in 1999.

⁷ [Enerugi kondankai, 1961], part of minority opinion.

⁸ Mitsunobu Tsumura (former director of Japan National Oil Corporation), who is familiar with the overseas oil development operations of Japan's oil companies, says in this regard, "the oil refining industry, under the Petroleum Industry Law as a permanent law, has no incentives to launch into upstream operations." ([Tsumura, 1999a] page 5).

⁹ This information comes from the Development Division, Petroleum Department of the Agency of Natural Resources and Energy.

¹⁰ According to an analysis by Japan National Oil Corporation, the projects financed by the corporation other than the national projects numbered 129 as of end March 1998.

¹¹ For instance, see [Saito, 1990] referenced above, pages 267-268.

¹² In this respect, it was pointed out that "the investments and finances so far made by Japan Oil Corporation were by the so-called 'convoy system'." ([Inokuchi, 1998] page 27).

¹³ This issue is raised in awareness of the argument made by Daniel Okimoto [Okimoto, 1989] (Japanese translation [Okimoto, 1991]). Okimoto pointed out that "the thorough consistency of Japan's industrial policies tend to be overestimated", further citing two points as to what the matter is with the study of industrial policy: "enough effort has not been made to illuminate policy differences by industries" and "it has not been given enough attention that even in the same industry there are differences in the effectiveness of industrial policy." ([Okimoto, 1991] referenced above, pages 6 and 7). In other words, raised here are two questions: (1) government roles differ with industries, and (2) the effectiveness of a policy differs even with the same industry.

Okimoto himself raised these acute questions, but his answers were not necessarily convincing. In answer to (1), Okimoto said that with industries not governed by MITI, there are many cases left with "areas remaining inefficient" while "with industries under MITI, its industrial policies have been far more consistently forward-looking and constructive." ([Okimoto, 1991] referenced above, pages 341 and 342). As for (2), he answered that the concept of lifecycles of an industry have been introduced, having industrial policies playing

significant roles for an industry in its early or declining stage while industrial policies diminish in the period of its maturity in between ([Okimoto, 1991] referenced above, pages 72-76). The postwar developments, however, were too complex to be fully explained by Okimoto's answers. In reality, (A) between industries on similar developmental stages and under the same governing ministry or agency, there were differences in the degree of the government involvement, and (B) policies for the same industry in the same period either had effect or no effect depending on the policy contents.

The following part will examine the issue (A). Besides, for the views of the author (Kikkawa) on the issue (B), see [Kikkawa, 1998a].

¹⁴ For more details of the electric power industry below, see [Kikkawa, 1995].

¹⁵ [Nippon sekiryu kabushikigaisha, 1988] page 639.

¹⁶ An exemplary one as conventional thought is [Johnson, 1982].

¹⁷ For instance, with approval of new or additional capacities under the Petroleum Industry Law, foreign affiliate oil companies were given relatively disadvantageous treatment.

¹⁸ This paper was written in the end of April 2000.

¹⁹ This author (Kikkawa) is a member of the sub-committee. He would like to add that the arguments of this paper is his own personal opinion and not the official opinion of the Petroleum Council, Development Department Meeting, Sub-committee on Fundamental Policy (started in 1999).

²⁰ For the examining process of the 1994 Petroleum Council, Petroleum Department Meeting, Sub-committee on Fundamental Problem of Oil Policy, see [Inokuchi, 1995] pages 259-269, 302-306. For the examining process of the 1998 Petroleum Council, Petroleum Department Meeting, Sub-committee on Fundamental Policy, see [Inokuchi, 1998] referenced above, pages 293-316.

²¹ This argument was raised during the 5th meeting of the Petroleum Council, Development Department Meeting, Sub-committee on Fundamental Policy held on June 3, 1999. For the examining process of the 1999 Petroleum Council, Development Department Meeting, Sub-committee on Fundamental Policy, see [Inokuchi, 1999] pages 311-323.

²² [Inokuchi, 1995] referenced above, page 159.

²³ [Inokuchi, 1997] page 215.

²⁴ [Shigen enerugichou, 1997] page 221.

²⁵ [Inokuchi, 1998] referenced above, page 157.

²⁶ [Shigen enerugichou, 1999] page 263.

²⁷ [Inokuchi, 1998] referenced above, page 157.

²⁸ The companies are ranked by oil refining capacity and oil products sales, and the downstream rankings were determined by averaging the figures. If the averaged figures are the same, the company with a larger total of oil refining capacity and petroleum refined products sales shall prevail.

²⁹ Another important fact Table 2 indicates is that both Japan and Germany have no such significant national flagship oil companies counted among the world's top 50. However, until 1998 Germany had Deminex as a state-influenced oil company operating only in the upstream sector. This company was dissolved after having achieved economic independence not supported by government funds. This contrasts with the upstream sector of Japan's oil and natural gas industry, where most of the firms have yet to be weaned away from the central government's financial support. The absence in Japan of national flagship oil companies means something more serious than in Germany.

³⁰ For the national flagship oil companies in oil-producing countries, refer to [Kikkawa, 2000] pages 269-270.

³¹ The descriptions of Total are based on [Sekiyu koudan kikaku chousabu, 1998] pages 83-88, 98-99, [Tsumura, 1999b] pages 1 and 2.

³² The descriptions of Elf are based on [Sekiyu koudan, 1998] referenced above, pages 11 and 14, [Sekiyu koudan kikaku chousabu, 1998] referenced above, pages 84-90, 100-101, [Tsumura, 1999b] referenced above, pages 1 and 2.

³³ The French government sales quotas for petroleum refined products were abolished in 1978.

³⁴ The French government continues to exercise a level of influence over Elf and Total through its ownership of the Golden Shares.

³⁵ The descriptions of ENI are based on [Sekiyu koudan, 1998] referenced above, pages 12 and 15, [Sekiyu koudan kikaku chousabu, 1998] referenced above, pages 84-88, 102-103, [Tsumura, 1999b] referenced above, page 3.

³⁶ [Tsumura, 1999b] referenced above, page 3.

³⁷ The descriptions of Repsol are based on [Sekiyu kaihatsu jouhou senta, 1996] pages 15, 67-70, [Tsumura, 1999b] referenced above, page 5.

³⁸ The descriptions of Deminx are based on [Sekiyu kaihatsu jouhou senta, 1996] referenced above, pages 15, 57-62, [Sekiyu koudan, 1998] referenced above, pages 11 and 13, [Sekiyu koudan kikaku chousabu, 1998] referenced above, pages 84-88, 104-107, [Tsumura, 1998], [Tsumura, 1999b] referenced above, pages 3-5.

³⁹ For further information on the companies VEBA Oel, RWE-DEA, Wintershall, refer to [Tsumura, 1998] referenced above, pages 8-11.

⁴⁰ [Sekiyu koudan kikaku chousabu, 1998] referenced above, page 87.

⁴¹ See [Sekiyu koudan kikaku chousabu, 1998] referenced above, page 88.

⁴² See [Tsumura, 1999b] referenced above, page 5.

⁴³ See [Sekiyu kaihatsu jouhou senta, 1996] referenced above, page 8 of the summary. To be more specific, it states "requirements for the success of the companies (namely, foreign oil companies like Deminex and Repsol, by Kikkawa) are to build up the 'core areas...' as the production base in a given period of time. Further, the requirements for long-term stable growth are to have multiple core areas to ensure long sustained production. For that, it is imperative to have geographical portfolios with both the oil production areas and the oil exploration areas" (page 8) and "Nowadays with the host nation unwilling to give a large mining area to a single company, the ability to build up the core areas by simply repeating oil explorations in different areas apart from each other is rare. It is imperative to aggressively pursue the building of the core areas by a combination of buying up other companies' oil assets, or even the other companies themselves and swapping mining areas" (page 8).

⁴⁴ [Sekiyu kaihatsu jouhou senta, 1996] referenced above, page 10.

⁴⁵ On this point, see [Sekiyu kaihatsu jouhou senta, 1996] referenced above, pages 62 and 70, [Sekiyu koudan, 1998] referenced above, pages 11-15, [Tsumura, 1999b] referenced above, pages 2-5.

⁴⁶ The descriptions below of Europe's non-oil-producing countries are based on [Tsumura, 1999b] referenced above.

⁴⁷ See [Sekiyu koudan kikaku chousabu, 1998] referenced above, pages 89-90, 99, 101.

⁴⁸ In February 2000, Nisseki Mitsubishi announced plans to cooperate with Teikoku Oil, one of the largest upstream oil companies in Japan.

⁴⁹ If the upstream integration of the oil companies is to be realized, the fact that Japan National

Oil Corporation is a common equity holder of Indonesia Oil, Japan Oil Development, and Oil Resources Development is an important factor which may make it happen. To promote the horizontal integration of oil companies in the upstream, it should be important for Japan National Oil Corporation to use its influence as the equity holder. Arabian Oil, which lost its oil production rights in Saudi Arabia in February 2000, is not here cited as an integration target company because Japan National Oil Corporation is not its equity holder.

⁵⁰ [Sekiyu kaihatsu jouhou senta, 1996] referenced above, pages 60 and 61.

⁵¹ See [Tsumura, 1999b] referenced above, page 4.