

94-F-35

Relationship between Government and Firm
in the Post WWII Economic Recovery:
Policy of Industrial Rationalization and Firm

by

Tetsuji Okazaki
University of Tokyo

September 1994

Discussion Papers are a series of manuscripts in their draft form. They are not intended for circulation or distribution except as indicated by the author. For that reason Discussion Papers may not be reproduced or distributed without the written consent of the author.

Relationship between Government and Firm in the Post WWII Economic Recovery: Policy of Industrial Rationalization and Firm

1. Introduction

There has been focus on the unique structure and the long-term relationship of post WWII Japanese industries with government, banks, firms, and other such economic entities (Aoki [1992]). This paper focuses on the relationship between government and firm, using a historical case study to evaluate an important aspect of post-war Japan's economic system. I will look at the policy of industrial rationalization that was implemented in the 1950's.

As discussed by Okazaki and Okuno [1993] and Okazaki [1993a] Japan's economy followed the economy which had been in place during the war for several years. The implementation of the Dodge plan in 1949 paved the way for the Japanese economy to move toward a free market economy. An important institution that was created due to the planned and regulated economy which had been followed during the war and ensuing couple of years, was a sector specific regulation committee, or a sector organization which developed between the government and firm. A close relationship in which cooperation and information exchange took place developed. One can say that this structure adapted and changed its function after the Dodge plan and the ensuing move toward a market economy. On the one hand, the industrial rationalization policy was taken as part of the Dodge plan starting in 1949, and was the industrial policy taken in the time immediately after

the return to a market economy. Thus, one can say that the industrial rationalization policy is a good case to study to understand the formation of the post-war relationship between the government and industry.

There are several basic papers concerning industrial rationalization policy. Tsuruta [1982] claimed that the industrial rationalization in the early 1950's were the "starting point of industrial policy" and that the "priority financing," "priority tax reduction," and the establishment of indirect social capital were the source of industry's investment and market share competition which led to the rapid growth in the Japanese economy and the development of heavy industries (ibid, Chap. 3.) Kousai [1984], concerning the rationalization of production policy, has claimed that it was a step toward the rationalization of investment which decreased the risk of technology, of the market, and of finance and smoothed over the imperfections in the capital markets (p.36.) There are many aspects of this issue on which the opinions of these two authors agree, but there is a slight difference on a very important point. Tsuruta [1982] claims that while industrial policy did lead to the development of heavy industries, that "the development of heavy industries of the industrial system would have occurred by market forces alone" (p. 80) while Kousai [1984] focuses on the imperfections in the capital markets. There is also the claim that, theoretically, even with a perfect capital market, government intervention would have been necessary to bring about changes in the industrial system. (Ito

et.al.[1988]]¹ In this paper, first confirming the problems faced by Japanese industries and companies during the transition to a market economy, I will look into the how problems were resolved by the government and companies by looking at material from that time period. I will look into the role and characteristics of the relationship between the government and companies concerning the economic development and industrialization of heavy industries.

2. Industry and firms during the transition to a market economy

First, I would like to confirm with basic data several aspects of macro and quasi-macroeconomic characteristics of the Japanese economy during the first half of the 1950's, which is the focus of this paper. Looking at the investment rate (private investment/GNP,) we see that before 1955 when the so-called rapid economic growth started, there was the beginning of an upward trend in 1950 (Figure 1.) Before that point, in the several years after the war, most of the growth in Japan's GNP was absorbed by consumption, and the investment rate remained low (Okazaki, Yoshikawa [1993], pp.69-70). The first half of the 1950's can be said to be the starting point of the post-war accumulation of capital.

The investment in the 1950's, which includes the first half of the rapid economic growth period, is characterized by the correlation between industries.

¹
On pp.32-36, Tsuruta [1982] has done a survey on the protection of infant industries, and in general was focused on the effects of government policy.

Yoshikawa [1992] accounts for the rapid economic growth through growth in the domestic sector, and points to the high correlation of investment between industries as a stylized fact (pp.78-79). When the same calculations are made for data from the 1950's, the high correlation becomes even more evident (Figure 1.) It can be said that investment restarted at the same time in each industry during the first half of the 1950's. This was also a time of transition for the industrial system. The relative weight of the heavy industries, which increased greatly during the war, decreased after the war. This decrease stopped around 1950, and became the starting point for the rapid industrialization of heavy industries during the rapid economic growth period. By looking at the relationship between the government and companies in the process of the aforementioned transition in the post war Japanese economy in terms of the industrial rationalization policy, we should be able to see the role of government and firms.

The shift to the single exchange rate in April, 1949 (1 dollar= 360 yen) from multiple exchange rates, which had in effect been acting as a subsidy for Japanese industries, had a significant impact on them. According to a survey by the Economic Stability Board, the exchange rates in effect for the main products at the beginning of 1949, were as follows in Figure 2. While textile products were appreciated under 360 yen, many machinery products were depreciated. Thus if the exchange rate was to be fixed at 1 dollar= 360 yen, the Economic Stability Bureau of the Ministry of Commerce and Industry would not be able to export in the machinery area, sewing machines, watches, bicycles,

radios, cameras, and ships. This would have resulted in fulfilling only 70-80% of projected exports. In addition to this, in accordance to the Dodge plan, the subsidies for the metals industry would be decreased, which would result in the increase in the price of the raw materials of the machinery. This would make exports even more difficult.²

The expectations placed on the exports of machinery to act as an engine for the post-war economic recovery of Japan was high among the government and private sector. In the May 1949 report of the Planning Committee of Economic Reconstruction³, made up of representatives from the associations of the respective industries and banks, as well as all relevant government agencies predicted that "thread and cotton products will be demanded less from abroad, and that machinery and chemical products will be demanded more." Based on this prediction, they planned for machinery exports to hold a 21.5% share of total value of exports by the target date of 1953.⁴ These plans were made because textiles, which had been Japan's main export before the war, were not seen to have bright export prospects in the former markets of India and China, due

²
Japanese Industrial Association, Industry Division "The fixed exchange rate and export industries," "JIA Monthly" May, 1949, p.3

³
Refer to Okazaki [1993]

⁴
"Keizai Fukki Keikaku Iinkai Houkokusho" Arisawa [1990], pp.206-207.

to development and industrialization.⁵ Thus, the prospects of not being able to exports machinery had even graver implication.

The important factor is the fact that the machinery industry, which had been expected to be the main export industry, having become internationally uncompetitive, affected the condition of related industries. This fact was pointed out by many sources at the time. The Kigyō Kenkyū Kai was relatively quick in pointing out the problems faced by companies in the various industries due to international competition. The Kigyō Kenkyū Kai had the aim of "studying the problems faced by the industries that support the Japanese economy both domestically and abroad, in order to maintain and develop them"⁶ and was established in December 1948 composed of corporate management, administrators, and researchers.⁷ The same Committee in 1949, receiving the approval of the Economic Stability Board, the Finance Ministry, and the Ministry of International Trade and Industry (MITI), assigned committees to the three themes of "rationalization,"

5

Keizai Fukki Keikaku Iinkai "Keizai Fukki Keikaku Dai-ichi Shian" (May, 1948) *ibid*, p.73.

6

"Kigyō Kenkyūkai Kaisozu" (Revised April, 1949), Economics Department, University of Tokyo holdings "Keizai Antei Honbu Shiryou."

7

"Zenkoku Kakushu Dantai Meikan" 1993 edition, Shiba Inc. 1992, Upper volume, p.338.

"moving towards independence," and "industry finance."⁸

During the first committee meeting on "moving towards independence," the machinery manufacturers brought up the problem of price and quality of steel produced by the steel companies.⁹ The director of the Automobile Industry Association said that "steel took up 16% of production costs, and that the automobile industry would like to reiterate that the price of steel is the biggest problem." They also requested for "the improvement of the quality of the steel, as the automobile industry currently could not use the steel as delivered, and that it could only be used after being treated by the automobile companies." Hitachi Manufacturers, as an electrical appliance manufacturer claimed that "only by using the steel priced at consumer prices with the cost lowering subsidies, could exports be possible at the 360 yen "rate." They wished for the steel industry's drastic rationalization and for them to lower costs, which in turn could be provided to the electrical appliance industry, allowing for the export of machinery products. Additionally, at the fourth committee meeting, Ishikawajima Heavy Industries claimed that "reducing the costs at the ship building facility itself by half would only result in a 20% decrease in total costs and that sufficient

⁸

Kigyō Kenkyūkai "Gorika Iinkai Dai-ichi kai Kaigō Yōroku," *ibid*, "Keizai Antei Honbu Shiryou."

⁹

Sangyō Kenkyūkai "Sangyō Jiritsusei no Kenkyū, Sangyō Jiritsuka Iinkai Kaigō Yōroku, Dai-ichi kai Sōgō Iinkai," same as above

rationalization of the ship building industry would not be possible without the industrial rationalization of each industry and of the Japanese economy.¹⁰ As indicated, the machinery manufacturers perceived the lowering of the cost of their main input, steel, as the key to the international competitiveness of their products. At the same committee meeting, Japan Steel pointed out that in order to lower the cost of steel, saving shipping costs by using Japanese ships and lowering the price of coal would be necessary.¹¹

The request for using Japanese ships was an earnest one. On a different occasion, the chairman of Japan Steel Management claimed that, in 1949, the shipping costs of the raw material was 2.6 million dollars, 33% of the material costs, while this cost would be 1.5 million with Japanese ships. Thus he requested that "in order to resolve the current situation in which self-sufficiency in transportation is not possible, to have more shipping companies be established."¹² Yet from the regional shipping companies' point of view, there was a need for the decrease in price of ships. This meant that there was a need for the rationalization of the ship building and related

10

Kigyō Kenkyūkai "Jiritsuka Iinkai (Shō-iinkai) Dai-yōnkai Kaigō Yōroku," same as above

11

ibid. "Sangyō Jiritsusei no Kenkyū, Sangyō Jiritsuka Iinkai Kaigō Yōroku. Dai-ichikai Sōgō Iinkai."

12

Kawada Shigeru "Tekkōgyō to Kaiun," "Nissankyō Geppo," November, 1949

industries.¹³ As Kousai [1990] (p.297) and Nakagawa [1992] (pp.116-129) have indicated, the coal, steel, ship building (machinery,) shipping, and other such industries, were connected through the initial inputs and the services added, resulting in an interdependent relationship with high costs.

The interdependent relationship among industries relating to international competitiveness was not only in the form of a given industry's product, but in the form of service prices affecting another industry's cost of production, as noted previously. Another aspect of interdependence can be seen in that a given industry's level of production or investment, through the size of the market, affects another industry's production scope, which in turn affects the cost. This problem had been taken issue by the companies at the time. The Federation of Industries, which was an organization made up of large companies, similar to the Federation of Economic Organizations, had taken up the problem of the international competitiveness in Japan's industries, centered on machinery and steel. In June 1949, the Federation of Industries, hearing that the government would follow the policy of reducing steel subsidies and seek price restructuring, held a conference with steel producers and companies that purchase steel, and conducted a survey to see what the

13

Tanaka Tokujirou (Chairman of Tokyo Kaijou) "Nihon Keizai no Jiritsu to Genka Kaiun no Shomondai," "Nissankyō Geppo" November, 1949

effects on a price increase in steel would have on the steel purchasing industries.¹⁴

As a result of this survey, the associations from the steel purchasing industries responded that the total cessation of subsidies would lead to a 20% (agricultural products) to 70% (goods with steel as intermediate inputs) increase in costs for machinery and goods using steel as an intermediate input. A large majority of the steel purchasing industries also responded that the effects of a price increase in steel could not be absorbed through the rationalization of their own companies. The reason given by a majority of the steel purchasing industrial organizations was that further cost reduction were difficult in the face of decreasing rates of operation due to slower domestic demand and poor performance of exports. One notices that the Federation of the Machinery Industry stated that "relating to the effective demand toward machinery products, we will say to the machine manufacturers, who face the demand industries with low refund rates, that from now on 'newly purchased machines would have high refund rates for the first year.' Such investment promoting policies were suggested."¹⁵ The machinery manufacturers thought that not only would the investment toward rationalization in the various industries reduce cost in the industries, but that

14

Nihon Sangyou Kyokai "Dai-gojugokai Teirei Rigikai Youroku," Economics Department, University of Tokyo holdings, "Ishikawa Ichirou Bunsho."

15

Nihon Sangyou Kyokai "Tekkou Kakaku Hikiage ni yoru Juyou Bumon ni oyobosu Eikyō Chōsa Houkoku Gaiyō" (August 2, 1949,) same as above

through expanding the domestic market, the cost of producing machines would go down as well.¹⁶ Another point of discussion was also brought up in this survey concerning the same economies of scale. In the response from the automobile industry, they claimed that the lack of electricity was preventing an increase in the rate of operation, producing difficulties in realizing a decrease in costs. At the time, there were regulations on the output of electricity and this acted as a bottleneck, as costs could not be reduced by taking advantage of production scales of economy.

Putting all of this together, the problems faced by Japanese industry and companies in 1948-1950 can be organized into Figure 2. Limitations on reducing costs by the various industries were produced both by the market and investment costs, and as a result, limited the export of machinery, which had gained a wide consensus as to being the key to the recovery and future growth of the Japanese economy. Due to the fact that the interdependent relationships were complex and wide ranging, as several of the examples indicated, the self-motivated independent actions of isolated industries alone would likely not result in the resolution of this vicious cycle. The rationalization of production policy was started under these conditions.

16

At the meeting held by the Nihon Sangyou Kyougikai in the beginning of 1950, the chairman of Shibaura Joint Industries stated that "the main reason that the machinery industry is facing problems in improving efficiency, compared to other industries, is that there are very few orders." ("Nissankyō Geppo" March, 1950.)

3. The Council for Industrial Rationalization and the drafting of the rationalization plan

The industrial rationalization policy started in earnest in September 1949 with the council decision "regarding the rationalization of production" (Tsuruta [1982], p.44; Ministry of International Trade and Industry [1991], p.509.) Based on this decision, in December, the Council for Industrial Rationalization was established as an advising mechanism to the Minister of International Trade and Industry. The Council for Industrial Rationalization at the time, consisted of a coordination branch, a general branch, and 29 other sectional branches representing various industries. Representatives for these sectional branches were comprised of the representatives of the various industry associations and officials from the leading companies within each industry (Figure 3.) This composition can be said to reflect MITI's aim to have "the industrial rationalization process be developed by a wide range of government and private actors."¹⁷

MITI's aim as to the operation of the Council for Industrial Rationalization should be taken note. MITI had wanted for the council to take up the following three problems.¹⁸

¹⁷

Ministry of International Trade and Industry, Corporate Division, "Summary of the Establishment of the Rationalization of Production Council" (November 20, 1949,) "Ishikawa Ichirou Bunsho" K47-1.

¹⁸

"Sangyou Gourika ni kansuru Ken" (author unknown,) same as above

1. Find the aspects of the respective companies, respective industries that need to be rationalized and to estimate target amounts and costs for the areas to be rationalized.

2. Eliminate the barriers to rationalization and investigate the problem areas in the necessary economic conditions for rationalization.

3. From an industrial structure perspective, keeping in mind the practical distribution of the respective industries, looking into the intertwined dependence of the key basic industries.

This first issue will be investigated in the industry-specific branches, while the second and third issues will be taken up by the respective relevant industry-specific branches and then adjusted at the coordination branch. The fact that issue three would be taken up by the coordination branch and would be adjusted between the relevant industries, may be a reflection of the fact that the problems faced in each industry were intertwined among them. One important issue for the Council for Industrial Rationalization can be said to have been the creation of a path through which the vicious cycle among industries could be resolved by looking into the rationalization strategies of the relating industries and by the adjustment process carried out by the coordination branch.

The activities of the respective branches in the Council for Industrial Rationalization by April 1950 was as described in Figure 4. As is well known, in 1950 there was emphasis placed on the discussion of steel and coal. Therefore, I would like to take up the steel and coal discussion in detail. The steel branch was created in January 1950 and was composed of the

general, management, accounting, and trade subdivisions. The intermediate report of this branch was given to the coordination branch, specialized board on February 17.¹⁹ According to this report, the steel branch settled on the "summary of steel branch operation requirements" on February 4, and decided that they would look into whether steel exports would be possible after subsidies were cut off. At the branch meeting, it was determined that the price gap in steel in relation to Europe and the US would continue to increase. It was also determined that the processing cost accounted for only 20% of the cost of producing steel and that reducing this cost to make the overall steel price competitive with international prices would be difficult. The high prices of the raw inputs, especially coal was pointed out. In practical terms, the cost of coal accounted for 50% of the steel cost. The price of domestic coal provided to factories was 14-15 dollars compared to 7 dollars in the US.

Having received this report, the coordination branch, specialized board debated the steel and coal issue in depth. First, in supplementing the report, a specialty committee member from Nippon Steel said "there is a limit to the amount of rationalization that can be done within companies and the future was not promising in light of the current price of coal." In addition to this, a representative of MITI expressed the view that "if the current situation was maintained, all other industries would go under and that only the

¹⁹

"Sangyou Gourika Shingikai Sougou Bukai Dai-ni kai Senmon Bukai Gijiroku," same as above.

coal industry would remain," "the issue of coal prices was a central problem to industrial rationalization," and "that as long as the vicious cycle between the coal companies and the relating industries could not be broken, the problem would continue." It was determined that once the steel branch and coal branch could agree on qualified targets, the coordination branch would take the issue up in discussion. Thus, concerning steel and coal, the rationalization plans of two intertwined industries would be looked into and adjusted as had been planned from the beginning.

The initial conclusions from the steel branch were summarized in the intermediate report given in April 1950.²⁰ This report confirmed the statements made by the specialized member at the coordination branch specialized board meeting on February 17. Thus, it was stated that "the conclusion has been reached that the high price of coal, which is the main input for the steel industry, prevents the steel industry from being internationally competitive, regardless of severe rationalization within the industry." The quantified reasoning behind this conclusion is given (figure 5.) At present coal costs, the elimination of subsidies would result in domestic steel prices largely exceeding the steel prices in Europe and the US. Data indicated that "reducing all possible production costs for a given year" would still not lower the price enough to be able to export. Furthermore, the fact that if imported and domestic coal prices fell to international

20

Sangyiuu Gourika Shingikai Tekkou Bumon "Tekkougyou no Gourika ni tsuite," same as above, V-9.

levels, steel exports would be possible without subsidies, indicated that much of the reason for steel being internationally uncompetitive was due to the high coal costs. "If the high price of coal continues and subsidies are eliminated, not only will steel not be exported, but machinery and other industries that use steel as an intermediate input will also not be able to export. This will decrease domestic demand, the steel industry will be forced to reduce operations again, and production costs will increase." This vicious cycle mentioned in the previous section was emphasized.

The intermediate report of the steel branch was issued in April 1950 before the coordination branch, specialized board meeting. Furthermore, on April 25, "the problems concerning the industrial rationalization of the steel and coal industries," was issued.²¹ The first interesting aspect of this report is that the industrial rationalization plans of the coal industry are taken into consideration. The high price of coal was found to be a result of decreased efficiency due to poor mining facilities, restriction on labor hours, degenerating natural condition, and changes in labor structure. The report claimed that "in order to resolve the high price of coal, there was an immediate need to refurbish internal and external facilities, to increase automation, and to emphasize the 'rejuvenation' of the coal mines. At the same time, there was a need to remove the objective constraints that were leading to the lowered efficiency." The report sought at least 23.1 billion yen in investment

²¹

Same as above.

in facilities. Secondly, in this report, the coordination branch specialized board claimed through data that the relative high price of steel was affecting the international competitiveness of the shipping industry, thus quantitatively demonstrating the relationship between the steel and shipping industries. Even at present prices, with the cost of steel for ship building priced at 18500 yen/ton, the cost of a large ship in Japan would exceed that of one in Great Britain. If subsidies were eliminated the cost of steel for ship building would become 36500 yen/ton and the price of a Japanese ship would further increase by 13%. Based on this, one plan that needed to be looked into was "rationalization for the lowering of costs in ship building." Thus, one could say that the Council for Industrial Rationalization not only mediated the adjustment between the industrial rationalization plans of the steel and coal industries, but also incorporated the concerns of the machinery (ship building) industry.

On April 28, the coordination branch debated the industrial rationalization plans for the ship building, steel, and coal industries. Regarding ship building, one member stated that "the price of ships is high. There is no purpose in a ship that cannot stand the competition. I want a ship that is competitive." A MITI under-secretary stated that "in the current condition, we will not be able to export ships. We will immediately meet with the Ministry of Transportation and discuss this issue." As for the reason for the high cost of ships, members claimed that "the reason the 'cost' of ships becomes high is because of problems with interest rates, but more importantly

the steel and coal." The issue of steel and coal was explained in the report issued by the steel branch and the report issued on April 25 mentioned previously. After debating the issue, a MITI under-secretary stated that "we would like to issue the intermediate report of the coal branch soon." As mentioned previously, the quantified targets of the steel industry had been issued, so the quantified plans for industrial rationalization for the coal industry, which needed to be assimilated and adjusted with that of the steel industry, was sought as soon as possible.

This report was issued on June 17, 1950 in the form of "Regarding the Industrial Rationalization of the Steel and Coal Industries."²² This report calculated the target coal price that would be necessary in order for steel prices to be internationally competitive. By calculating whether coal prices could be lowered to such levels, we see that the rationalization plans for the steel and coal industries were being adjusted. In 1953 the price of steel bars for export, including profit margin was projected at 60 dollars (21600 yen.) This meant that in order to realize this target, the price of steel had to be 33 dollars (11880 yen), the price of the necessary coal (before processing,) was calculated to be as follows. Raw coal 2800 yen, produced coal, general coal 2300 yen. In order to realize this goal, the coal industry claimed that by 1953, they would need to decrease the cost of extracted coal by 18%. Data of the price of extracted coal was reported in a report dated June 20, issued by the coal

²²
MITI [1992,] p.523.

branch, titled "On the Rationalization Plans of the Coal Industry." But, despite the decrease in the price of the extracted coal, the price of the raw coal before processing was 3700 yen, and the conditions for the produced coal, general coal would only become worse. Thus while the rationalization plans for the steel and coal industries were being advanced at the same time, there was not necessarily the prospect that steel would be internationally competitive.

After such a pessimistic report had been issued, the coordination branch revised its rationalization plans greatly. In the coordination branch, specialized board report "Regarding the Rationalization of the Steel and Coal Industries" (June 20, 1950)²³ using the data from the June 17 report, they recalculated the steel price that would allow for it to be exported under the following conditions. If the steel industry focused on the production of high quality factories, and used oil, the target price of coal could be relaxed as follows. Raw coal 3000 yen, produced coal 2900 yen, and general coal 2500 yen (Figure 6.) As for coal, focusing on the high efficiency coal, and providing for special revitalization loans, the price of raw coal could be reduced to 3200-3300 yen, and with the trend toward deflation due to the falling coal prices, and the importation of cheap coal would make possible the export of steel. The report "Regarding the Goals and Aims for Reduction in the Cost of Steel Production"

23

"Ishikawa Ichirou Bunsho." K47-2

issued by the steel branch (June 22, 1950)²⁴ provided data that supported the above claim. It stated that with raw coal priced at 3000 yen, produced coal at 2900 yen and general coal at 2500 yen, the price of a steel bar would be 60 dollars (21600 yen.) This conclusion was made at the June 24 coordination branch meeting and was made official on August 18 as "the Summary of the Plans for Industrial Rationalization in the Steel and Coal Industries."

In this way, by rationalizing not only the steel industry, but rationalizing the coal industry at the same time, prospects for the steel industry being internationally competitive became apparent. This was authorized in the form of a council decision. An additional point that should be noted is that this conclusion also created the prospects for the ship building industry to be internationally competitive as well. The results were collected in May 1950 by the Research Committee of Steel for Ship Building, formed by the Economic Stability Board, Bureau of Construction and Transportation and twelve major ship building companies, under the auspices of the Bureau of Shipping within the Ministry of Transportation which over saw the ship building industry.²⁵ According to this, in order for Japanese ships to be price competitive with European ships, the ship building industry would need to be rationalized and at the same time, the price of

²⁴
same as above.

²⁵
Unyushou Senpakukyoku "Zousenyou Kouzai Kakaku ni tsuite" same as above.

steel for ship building would have to fall under 27000 yen. The Research Committee of Steel for Ship Building claimed that this condition could be met if the price of steel sheets was 24090 yen and the ship building standard fee could be reduced to 2900 yen through rationalization of the steel industry. The price of steel plates was not estimated in the coordination branch conclusions regarding the industrial rationalization of the steel and coal industries, but this can be estimated from the June 20 report to the coordination branch, specialized board, by calculating the relative price of the steel plates and the steel bars. Since the price of the steel bars was 21600 yen, the steel plates would be 24622 yen. This demonstrates that along with the rationalization of the steel and coal industries, rationalization of the ship building industry would create the prospect of the industry becoming internationally competitive.

The decision made on June 24 by the coordination branch, based on the reports of the steel branch and the coal branch, would require investment in facilities in the amount of 42 billion yen for the steel industry and 40 billion yen for the coal industry for their respective rationalization. This is described in Figure 7. Looking at this with the above facts, we see that the Council for Industrial Rationalization, through the efforts of the government and private members, was able to develop an investment plan that took into account the rationalization of related industries. This investment effect would allow for the prospect of making the steel and ship building industries internationally competitive. In other words, the Council for Industrial Rationalization

assimilated and organized information from the various companies and industries, and created a path through which the selected industries, industries which were to act as the engines for economic recovery, could escape from the vicious cycle described previously. They fulfilled their role of creating an investment formula, using the rationalization plans developed for the different industries and by incorporating the adjustments made at the coordination branch level.

4. Relationship between the government and companies in implementing the industrial rationalization plan

The research and creation of the rationalization plans by the Council for Industrial Rationalization would affect each company's investment plans. Furthermore, the government played a role which the respective companies could not ignore in following through with their investment plans. Let us look at this issue with respect to the steel industry. We will look at the effect of the industrial rationalization plan for the steel and coal industries by checking the historical record of several prominent companies. At Yawata Steel, having been created after the break-up of Nippon Steel, plans for the modernization of facilities had been worked on. After becoming aware of the government's rationalization direction, they announced a three year plan for the modernization of facilities.²⁶ Even at Nippon Koukan, having been aware in September of 1949 that the subsidies for steel

²⁶

Shin Nippon Seitetsu Kabushiki Kaisha "Hono to tomoni Yawata Seitetsu Kabushiki Kaisha Shashi," 1981, p.16

would be stopped, they created the Rationalization Promotion Committee for the process of making pig iron. Accounting for the conclusions reached by the Council for Industrial Rationalization, they issued a new three year plan for modernizing facilities starting in 1951.²⁷ As is well known, Kawasaki Steel was moving from the process of establishing a new company to a unifying process plan. After the government's policy direction on rationalization was made apparent they requested for financing for collateral money, in November 1950, from the government in order to create Chiba Steel Works.²⁸

As a result of MITI collecting these plans from each company, the total investment over three years reached 121.1 billion yen.²⁹ Even accounting for inflation caused by the Korean War, the investment amount was nearly three times that which the Council for Industrial Rationalization had concluded. We cannot deny that the progressive stance of the private companies toward investment for rationalization and the boom from the Korean War had an effect on this figure. But, as the company histories show, we should not overlook the fact that the conclusions reached by the

27

Nippon Koukan Kabushiki Kaisha "Nippon Koukan Kabushiki Kaisha Yonju-nen shi," 1952, p.421.

28

Kawasaki Seitetsu Kabushiki Kaisha "Kawasaki Seitetsu Kabushiki Kaisha Nijugo-nen shi." 1976, p.73

29

Tsusansho Tsushou Tekkou Kyoku, "Tekkougyou no Genjou to Gourika Keikaku," p.56.

Council for Industrial Rationalization and the resulting declaration, were the impetus for the major companies to simultaneously produce and announce three year rationalization plans.

Next, in implementing the respective company's rationalization investment plans, there was an important constraint, namely procurement of funds. Concerning the 121.1 billion yen plan, the Bureau of Iron and Steel within MITI at the time, stated "there is room for consideration as there may be problems in overlapping facilities, guaranteeing procurement of inputs, and the ability to collect capital. There is also the problem of much of the investment funds relying on government money."³⁰ In resolving this problem of capital procurement, there was an emphasis on the role of the company management (Yonekura [1991,] p.296.) Needless to say, the abilities of the management and the company were important in procuring the capital for the investment in the rationalization of the steel industry. It is also important to note that the framework within which the companies could operate was formed by the companies, government, public agencies, and financial institutions led by the main banks. Let's look at the Chiba Steel Works projects of Kawasaki Steel, which was the focus of the first rationalization plan for the steel industry.

As implied in the previously mentioned MITI, Bureau of Iron and Steel reference, the first rationalization plan for the steel industry relied heavily on government funds. In April 1951, the Japan Development

³⁰
same as above, p.57

Bank (JDB) was established. In order to decide which companies the JDB should loan to, MITI again requested for the companies to submit their rationalization plans. Thus Kawasaki Steel reissued the plans for China Steel Works. MITI evaluated this plan as follows.³¹ Due to the lack of scrap steel, the increase in operation of the blast furnaces is necessary. But, "in this case, there is a need to determine whether we should operate the stopped unopened furnaces of furnace makers that are still in operation, operate owned furnaces that haven't gone into operation (Nakayama Steel Amagasaki Steel for example,) or to create a totally new facility (for example Kawasaki Steel, Chiba,) A new facility with two 500 ton blast furnaces would require ten billion yen of capital, and operating closed furnaces would only require two billion yen. "In terms of return on capital, operating closed furnaces would be better."

But MITI was considering the reasons why creating a new facility would be beneficial. First, it was apparent that in light of the lack of scrap steel, the rationalized future model for steel production would be unified production. It is preferable for an independent furnace maker to take a unified approach. Second, "the modernization of the blast furnace steel processing area would be best served by the construction of a new blast furnace factory." On this point, the Bureau of Iron and Steel stated that "currently the blast furnace manufacturers are working hard to improve the raw material processing, and the

³¹
ibid. "Tekkougyou no Genjou to Gourika Keikaku," p.61-62.

transport facilities. But, under a pre-existing factory layout, there are limits to improvements. In order to truly modernize a facility, it would have to be created at a new location. The modernization of the blast furnaces starts with the rationalized placement of the factory and facilities. Thus if capital conditions allow, we would like to build this plant as a model blast furnace plant, and this modernization of the steel industry would leave its mark.

MITI understood well Kawasaki Steel's plan for Chiba Steel Works. It also thought that if capital conditions allowed, that the plan should be promoted. Thus, the same Ministry's attitude had a large effect on the capital procurement of the aforementioned plan. JDB, having carefully prepared by discussing the issue with the former head of the technology division of Nippon Steel, surveyed the Chiba plan, but MITI's forward position on the issue and its outlook in terms of future steel demand were reflected in JDB's decision. In February 1952, MITI approved the Kawasaki Steel Chiba Works plan and at the same time recommended to JDB that it loan money.³² With this decision, JDB reaffirmed its position to provide a loan to the Chiba project.

The JDB loan was approved by the Bank of Japan (BOJ) committee on government policy. Regarding this, first, MITI support was important in shaping the committee's decision. Similar to the situation with JDB, MITI had provided the financial institutions with positive information. Second, the BOJ's position in

32

ibid. "Kawasaki Seiteteu Kabushiki Kaisha Nijugo-nen shi."

regard to the Kawasaki Steel Chiba Works plan, despite the emphasis to the contrary in subsequent literature and even if the BOJ wasn't necessarily forthcoming toward the Chiba Works plan, there is a need to emphasize that the JDB loan was made possible in the end because of a decision made by the BOJ.

Having received confirmation of the JDB loan, acting as the main bank for Kawasaki Steel, Dai-ichi Bank decided on the aid for the construction of Chiba Works in February 1953. It decided to provide the 250 million yen loan and loans from other banks in the form of indirect aid.³³ As a result, that June, an organization of cooperative loans made up of private banks was created, with Dai-ichi Bank as the manager. Dai-ichi Bank, as the delegated monitor, organized the cooperative loans, functioning as a typical main bank.³⁴ Concerning this, there is a need to look at the following point. First, the Kawasaki Steel Chiba project had been screened by MITI, the JDB, and the BOJ. Furthermore, behind that was an issue discussed in a previous section, pertaining to the wide consensus for the need for the Japanese steel industry (unified production) to be internationally competitive. It can be said that the main bank's inspection function had been supported by the screening process.

Secondly, the functions of the main bank were covered in a direct manner. Thus, the organization of

³³

same as above.

³⁴

Concerning the function of main banks, refer to Aoki et al. [forthcoming.]

cooperative loaning institutions, managed by Dai-ichi Bank, was established under the auspices of the loan mediation section of the BOJ. Loan mediation by the BOJ started in 1947 and until the beginning of 1950 almost all cooperative loans had gone through BOJ mediation. (Okazaki [1993b,] p.124.) The stance of the Occupying authorities resulted in its diminishing role after May 1950, but regarding the Chiba Works plan, this rule was in operation. This meant that the power of Dai-ichi Bank to authorize cooperative loans was held by the BOJ. This point is contrary to the accepted explanation, and regarding the implementation of the Kawasaki Steel Chiba plan, it is important that the BOJ played an important role.

Thus, we have seen the role of such public agents such as MITI, JDB, and the BOJ in procuring capital for investing in rationalization in the case of the steel industry. We have seen the general role that MITI (the Council for Industrial Rationalization) took toward the companies and financial institutions. Soon after being established, on March 29, 1950 during the coordination branch, specialized board, the Council for Industrial Rationalization looked into the demand for facilities capital. The industrial funds section of the bureau of firms within MITI, reported the amount of capital demand and its method of procurement to the specialized board. The demanded capital was 148.5 billion yen, which broke down into 112.5 billion yen relating to commerce, 2.3 billion yen for shipping, and 700 million yen for surface transport, and 600 million yen for agriculture, forestry, and fisheries. Regarding the prospects of procuring funds, the head of the industrial funds section said that "regarding

facilities capital, capital demand was affected by effective demand while with capital supply, there was the problem of capital structure (limit to loaning.) The effect of the repayments that amount to 120 billion yen, the supply of such long-term industrial capital and the saving of capital could result in a vicious cycle, so by excluding outside capital, a monetary policy which speeds up the rationalization process through the forced savings of the collateral would develop." "The effective demand" was reconfirmed to be one of the sources of the vicious cycle. The latter assertion indicates that during the post-war period, conditions that could prevent the over supply of investment capital were realized by financial institution in the form of decreased rates of return on stocks and decreased rates of return on time deposits (Okazaki [1994] p.8)

The industrial funds section requested that the method of transaction be determined as they revised the previously announced figures pertaining to the expected demand and supply of capital and the break down of the figures of each industry as reported on April 10 at the coordination branch, specialized board.³⁵ (Figure 8) The data is based on some 1200 companies surveyed by MITI.³⁶ The amount totalled 150 billion yen, but was

35

"Sangyou Gourika Shingikai Sougou Bukai (Dai-yon kai Senmon Bukai) Gijiroku" (April 10, 1950) "Ishikawa Ichirou Bunsho" K47-1.

36

"Showa Nijugo-nen do Shoyou Sangyou setsubi Shikin ni tsuite" (April 8, 1950) Tsushou Kigyokyoku Sangyou Shikinka "Showa 25 nen do Shoyou Sangyou Setsubi Shikin Soukatsu hyou" (April 5, 1950) " Nijugo-nen do Sangyou setsubi Shikin Gyoushubetsu Setsumei" (March 30, 1950) same as above.

scaled down to 116.8 billion yen as MITI decided that "the readjustment would take account of the effective demand."³⁷ The descriptions kept by the industrial funds section, regarding the investment plans of the respective industries is rather detailed, and at the same time, includes MITI's evaluation of the plans. For example regarding the steel industry, the 9.85 billion yen referred to in Figure 8, is labeled as rationalization of blast and coke furnaces, modernization in rolling mills, repair of blast furnaces, and reusing the rolling machine along with a comment that "the blast and coke furnaces, steel production, rolling mill facilities are more for the process of rationalization than for maintaining current conditions. This was a necessary step in reducing the costs to counteract the elimination of the subsidies. It would be a good idea to pragmatically pursue this goal."

The capital procurement plan in Figure 8 is that of a company's, and the industrial funds section said that "the 3.5 billion yen to be procured from private banks and the 1.11 billion yen in question of being returned should be looked into."³⁸ As mentioned previously, the industrial funds section had thought that the capital structure of the financial institutions had reached its limit. At the specialized board meeting on

37

"Showa nijugo-nen do Tsushou Sangyou Shou Shokan Jigyoushoyou Shikin ni tsuite" (April 28, 1950) same as above.

38

"Showa nijugo-nen do Shoyou Sangyou ni tsuite" (April 8, 1950) same as above.

this day, the first chief of the firm bureau expressed the view that "procuring more than 9 billion yen would be difficult. In the end, they offered the following opinion to the coordination branch "Regarding the year Showa 25, if the 9 billion yen investment into industry does not result in industrial rationalization, exports will of course not increase and it will become increasingly difficult to maintain Japan's industrial independence."³⁹

The coordination branch approved the specialized board's plan in the meeting on April 28. The details were to be worked out in the general branch, capital distribution section.⁴⁰ The capital distribution section was established in April 1950. This section was composed of members from important industries and companies along with specialized members from the BOJ, the Industrial Bank of Japan, the major private banks (Figure 9.)⁴¹

The capital distribution section was to look into seven issue areas, including 1. "Looking into the limits and methods of procuring capital, mainly for industrial rationalization"

39

"Sangyou Gourika Shingikai Sougou Bukai (Dai-yon kai Senmon Bukai) Gijiroku" (April 10, 1950, same as above.

40

"Sanygyou Gourika Shingikai Sougou Bukai (Dai-ni kai) Gijiroku" (April 28, 1950) "Ishikawa Ichirou Bunsho" K47-2.

41

"Gourika Shinjikai Ippan Bukai Shikin Bunkakai Dai-ichi kai Kaigou Keika" (April 12, 1950) "Ishikawa Ichirou" K47-1.

2. "Looking into the interest rate problem from the perspective of reducing the cost of products. Providing detailed accounts of the investment plans to the members participating from major financial institutions which acted to fill the information gap between the financial institutions and the industries, companies, and government officials. This would have the effect of decreasing the loan risk.

Along with the issue of capital procurement, there was another constraint on the investment for rationalization. This constraint was the size of the market. Lastly, I will discuss the way in which this problem was solved. Clearly, the efforts of the Council for Industrial Rationalization and the investment for rationalization made by the relating industries led to the machinery and steel industries becoming internationally competitive, and led to solving the problem associated with the size of the market. But while the cost was decreasing, there remained a problem with the size of the market. At the time MITI had considered providing subsidies during the three year rationalization plan, and had made a budgetary request. But this request did not pass the decision process. As the price of steel increased sharply,⁴² the problem of high steel prices was re-ignited in 1951. Japanese machinery, especially the international market for plants, suffered a sudden decline in order as the bidding price for steel increased and the price was pushed up (Association of

42

Kojima Keizou (Bukkacho Dai-san bu Jukougyou Kachou) "Sentetsu Hojokin Haishi to sono Eikyou" "Nissankyō Geppo" November, 1950.

Iron and Steel Industry [1958] p.104.) The chairman of Hitachi Manufacturing, as a producer of electric machinery, expressed his opinion that "regarding diesel generators last year (1950) having been beaten by the US, UK, and West Germany, the bidding price of Japan continues to be higher than those of other countries. If we are not able to solve this problem, we will not be able to export products of our heavy industries."⁴³ As rationalization was called for with the start of the Dodge plan, the predicted problems were becoming reality due to the elimination of subsidies.

In response to this situation the head of the section of machinery policy, Bureau of Machinery, within MITI stated in the Association of Iron and Steel Industry's magazine that "the rationalization of the machinery industry is necessary for the rationalization of raw materials, fuel, and for all other industries. And in order to fulfill this rationalization, there needs to be focus on the inputs to production for each industry.... Steel and machinery must act as one if the issue of economic independence is to be solved. A satisfactory result will not come about without this cooperation."⁴⁴ In response to this the steel industry responded that "we feel that [we] greatly benefit from Japan's machinery being exported, from the machinery industry expanding.... In the long run, the

43

Kurata Chikara "Jukikairui no Yushutsu Shinkou Taisaku" "Nissankyō Geppo" June, 1951.

44

Hidaka Jun'nosuke "Kikai Kougyō no Genjō to Mondai" "Tekōkai" February, 1952, p.33

steel industry should consult with the machinery industry, and do everything within its power to cooperate."⁴⁵

With an agreement between the Bureau of Iron and Steel, Bureau of Machinery within MITI and the Bureau of Shipping within the Ministry of Transportation, the steel and machinery industries met and agreed upon a 10-20% decrease in the price of steel. (Association of Iron and Steel Industry [1957] pp. 105-106.) Additionally, regarding the ship building industry, the government decided to make "plans to decrease the cost of ship building" in August, 1953. The government provided low interest loans through JDB to the steel industry, which were effectively subsidies, which in turn resulted in the decreased cost of the steel used for ship building.⁴⁶ So, one could say that the government intervention among companies and industries took place not only in the planning of the rationalization plans, but in their implementation as well.

5. Conclusion

In the first half of the 1950's, the Japanese economy, along with escaping from the low investment rates which followed the war years, reestablished the base of heavy industries. This process was not necessarily uneventful. As the Japanese economy was

⁴⁵

Kuwahara Suetaka (Yawata Seitetsu Chousa kachou) "Tekkou Kakaku no Mondaiten," "Tekkoukai" July, 1951, p.18

⁴⁶

"Tekkoukai" March, 1954

in transition to a market economy due to the Dodge plan, the heavy industries were faced with the high cost and small scale of the respective industries. This resulted in constraints on investment for rationalization, and the Japanese economy became mired in a vicious cycle that could not be escaped by the self-interested actions of companies alone. The solution to this problem lie in the close informational exchange between government and the companies and the resulting industrial policy. The problems facing the industry were made apparent by private organizations such as the corporate research committees and the Federation of Industries. This was then confirmed by the Council for Industrial Rationalization. The Council for Industrial Rationalization was a place where cooperation between government and private companies could create a path to escape the vicious cycle. That path was 'formularized' into a plan for simultaneous investments for rationalization among related industries. The discovery of this path resulted in private companies progressively making rationalization plans. Futhermore, in allowing financial institutions to participate in the investment plans, an important coordination function was established due to the informational system developed between private financial institutions and such institutions as MITI, the JDB, the Council for Industrial Rationalization, the general branch capital

distribution board,⁴⁷ and the BOJ's loan mediation policy.

47

The Council for Industrial Rationalization became the Industrial capital branch in 1957. This change emphasized the adjustment mechanism between the industrial sector and the financial sector. Detail of the functions regarding this branch are planned to be jointly written by Professor Masahiro Okuno (Econ Dept., University of Tokyo,) Professor Kazuo Ueda (Econ Dept., University of Tokyo,) and myself.

References

- Aoki M., H. Patrick and P. Sheard [forthcoming]
"The Japanese Main Bank System: An Introductory Overview," in M. Aoki and H. Patrick eds., The Japanese Main Bank System and its Relevance for Developing and Transforming Economies, Oxford University Press, Oxford
- Aoki M., [1992] Nihon Keizai no Seido Bunseki An Institutional Analysis of the Japanese Economy), Chikuma Shobo, Tokyo
- Kousai Y., [1984] "Fukko Ki," (Industrial Policies in the Economic Recovery) in R. Komiya et.al., Nihon no Sangyo Seisaku (Industrial Policies in Japan), University of Tokyo Press, Tokyo
- Kousai Y., [1990] "Kodoseicho heno Shuppatsu" (Take off to the High-speed Growth) in T. Nakamura ed., Keikakuka to Minshuka (Planning and Democratization), Iwanami Shoten, Tokyo
- Nakagawa K., [1992] Sengo Nihon no Kaiun to Zosen (The Shipping and the Shipbuilding Industries in Postwar Japan), Nihonkeizai Hyoronsha, Tokyo
- Nihon Tekko Renmei [1958] Sengo Tekko Shi (History of the Postwar Iron and Steel Industry), Nihon Tekko Renmei
- Okazaki T., [1994] "Evolution of the Financial System in Postwar Japan," Discussion Paper Series, Faculty of Economics, University of Tokyo, 94-f-2
- Okazaki T., [1993a] "Nihon no Seifu-Kigyo kan Kankei" (Government-Firm Relationship in Postwar Japan: focusing on Business Association and Council), Soshiki Kagaku, vol.26-4
- Okazaki T., [1993b] "Kigyo Shisutemu" (Corporate System) in T.Okazaki and M. Okuno-Fujiwara eds.,

- Gendai Nihon Keizai Shisutemu no Genryu (Origins of the Contemporary Japanese Economic System), Nihon Keizai Shinbunsha, Tokyo
- Okazaki T. and M. Okuno-Fujiwara [1993] "Gendai Nihon no Keizai Shisutemu to sono Rekishiteki Genryu" in T. Okazaki and M. Okuno-Fujiwara eds., . op.cit.
- Okazaki T. and H. Yoshikawa [1993] "Sengo Infureshon to Dodge Rain" (Postwar Hyper-inflation and the Dodge Plan), in Y. Kousai and J. Teranishi eds., Sengo Nihon no Keizai Kaikaku (The Economic Reforms in Postwar Japan), University of Tokyo Press, Tokyo
- Tsuruta T. [1982] Sengo Nihon no Sangyo Seisaku (Industrial Policies in Postwar Japan), Nihon Keizai Shinbunsha, Tokyo
- Ministry of International Trade and Industry ed. [1991] Tsusho Sangyo Seisaku Shi (History of the Industrial Policies) vol.2, Tsusho Sangyo Chosakai, Tokyo
- Yonekura S. [1991] "Tekko" (Iron and Steel Industry) in S. Yonekawa ed., Sengo Nihon Keieishi (Business History in Postwar Japan), Toyo Keizai Shinposha, Tokyo
- H. Yoshikawa [1992], Nihon Keizai to Makuro Keizaigaku (Japanese Economy and Macro Economics), Toyo Keizai Shinposha, Tokyo

Fig. 1 private investment/GNP

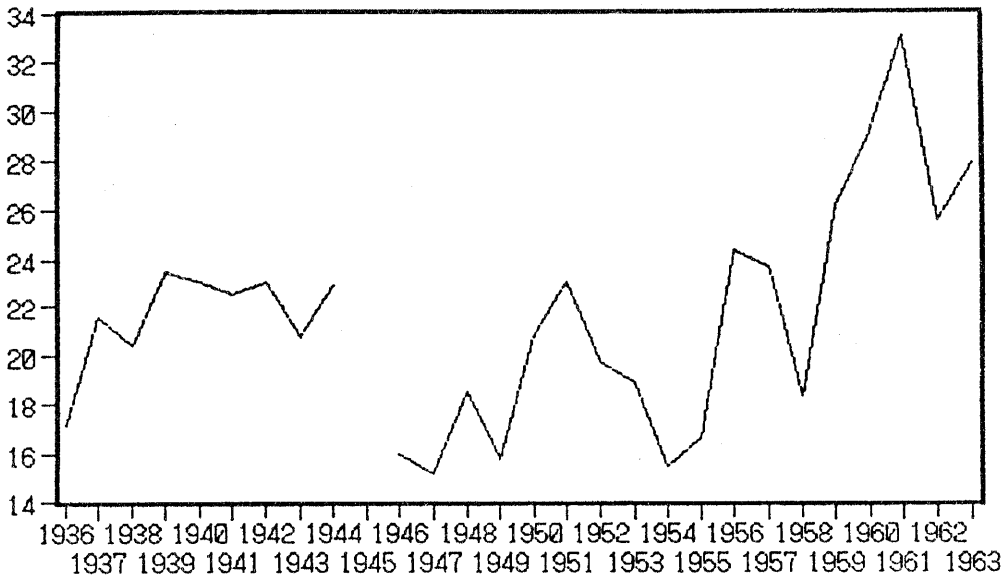


Table 1 correlation of investment by industry

1953-62

	electricity	steel	shipping	textile	chemical	ceramics	machinery	metal	mining	transportation	gas	fishery	average
electricity	1.000												0.559
steel	0.569	1.000											0.499
shipping	0.235	0.740	1.000										0.370
textile	0.723	0.306	0.175	1.000									0.578
chemical	0.732	0.718	0.596	0.788	1.000								0.704
ceramics	0.545	0.323	0.112	0.852	0.728	1.000							0.490
machinery	0.733	0.892	0.673	0.675	0.906	0.650	1.000						0.651
metal	0.562	0.656	0.435	0.756	0.919	0.743	0.822	1.000					0.633
mining	0.590	0.389	0.270	0.364	0.527	0.001	0.381	0.468	1.000				0.364
transportation	0.793	0.504	0.371	0.955	0.866	0.777	0.816	0.783	0.418	1.000			0.647
gas	0.260	0.382	0.337	0.033	0.334	0.160	0.313	0.175	0.078	0.186	1.000		0.202
fishery	0.409	0.007	0.126	0.730	0.631	0.503	0.305	0.648	0.513	0.651	-0.032	1.000	0.408

1963-73

	electricity	steel	shipping	textile	chemical	ceramics	machinery	metal	mining	transportation	gas	fishery	average
electricity	1.000												-0.079
steel	0.206	1.000											0.349
shipping	0.054	-0.027	1.000										0.044
textile	-0.255	0.427	-0.405	1.000									0.164
chemical	0.085	0.453	0.188	0.410	1.000								0.224
ceramics	-0.381	0.422	-0.593	0.513	0.301	1.000							0.148
machinery	-0.296	0.699	-0.202	0.505	0.493	0.650	1.000						0.276
metal	-0.217	0.672	0.067	0.494	0.656	0.303	0.711	1.000					0.252
mining	-0.257	-0.033	0.838	-0.290	-0.102	0.468	-0.108	0.126	1				0.096
transportation	-0.051	0.215	0.139	0.304	0.330	0.132	-0.050	0.060	-0.095	1.000			0.100
gas	0.004	0.662	0.095	0.304	0.041	0.182	0.664	0.275	0.201	0.003	1.000		0.284
fishery	0.238	0.139	0.332	-0.208	-0.396	-0.367	-0.028	-0.370	0.304	0.113	0.691	1.000	0.041

Source: Japan Development Bank.

Table 2 Exchange Rates by Comodities

textile	cotton yarn	250
	cotton cloth(raw)	250
	cotton cloth(pre-dyed)	300
	cotton cloth(bleached)	300
	cotton cloth(printed)	300
	knitted cotton	300
	rayon staple	420
	rayon cloth A	250
	rayon cloth B	420
	rayon muffler	350
staple fiber	350	
machinary	freight car	372
	passenger car	381
	catcher boat	520
	steel ship	530
	wooden ship	300
	automobile parts	542
	spinning machine and its parts	320
	weaving machine	240

Fig. 2 Interrelation of the problems of industries in early 1950's

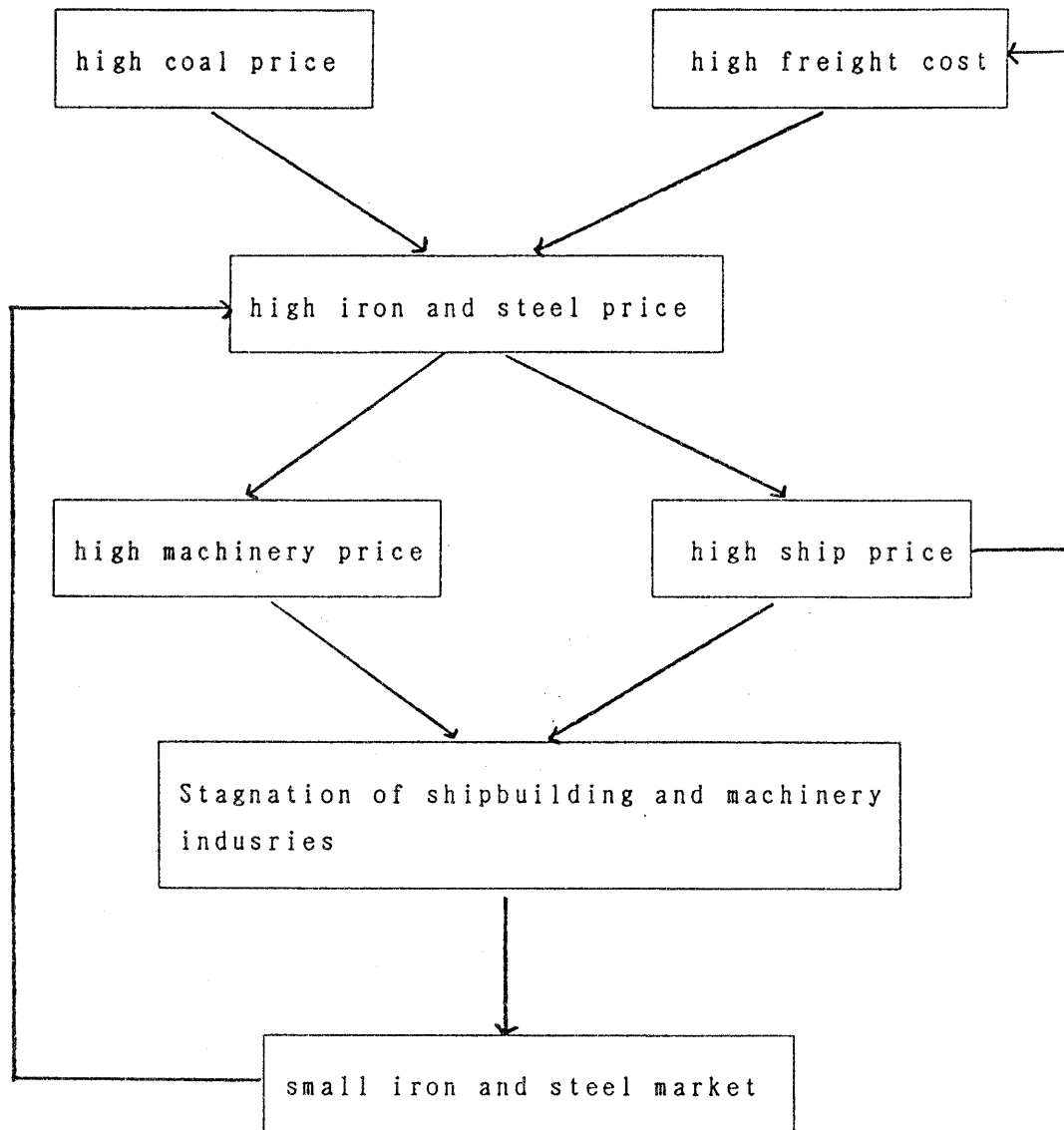


Table 3 membership of Council of Industrial Rationalization

branch	members of each branch					
	total	general association	industrial association	financial institution	industrial firm	others
total	100	3	32	2	53	10
coordination	10	2	0	2	5	1
general	10	1	0	0	1	8
cotton	3	0	3	0	0	0
silk	3	0	3	0	0	0
synthetic fiber	3	0	1	0	2	0
flax and wool	3	0	1	0	2	0
clothes	3	0	3	0	0	0
fabrics	3	0	3	0	0	0
paper	3	0	2	0	1	0
rubber	1	0	0	0	1	0
ceramics	3	0	0	0	3	0
leather	1	0	1	0	0	0
daily necessary	4	0	2	0	2	0
industrial machinery	4	0	1	0	3	0
electric machinery	2	0	1	0	1	0
communicating machinery	2	0	0	0	2	0
precision machinery	5	0	3	0	2	0
vehicle	2	0	2	0	0	0
forge and foundry	2	0	0	0	2	0
organic chemicals	2	0	1	0	1	0
inorganic chemicals	2	0	0	0	2	0
oils and fats	2	0	1	0	1	0
chemical fertilizer	3	0	2	0	0	1
iron and steel	4	0	0	0	4	0
processed steel	2	0	0	0	2	0
coal	4	0	1	0	3	0
gas and coke	3	0	0	0	3	0
mining	2	0	1	0	1	0
metal	3	0	0	0	3	0
petroleum	2	0	0	0	2	0
electricity	4	0	0	0	4	0

Frequency of each Branch of Council the Industrial Rationalization Council
(1949.12-1950.4)

Branch	
total	162
coordination	5
general	8
cotton	0
silk	0
synthetic fiber	0
flax and wool	2
clothes	0
fabrics	0
paper	10
rubber	2
ceramics	9
leather	8
daily necessary	62
industrial machinery	4
electric machinery	9
communicating machinery	8
precision machinery	1
vehicle	3
forge and foundry	3
organic chemicals	4
inorganic chemicals	1
oils and fats	0
chemical fertilizer	1
iron and steel	8
processed steel	10
coal	2
gas and coke	2
mining	0
metal	0
petroleum	0
electricity	0

Interim Report of Iron and Steel Branch

	yen/ton			
	A	B	C	
	export price	cost excluding subsidy before rationalization	cost excluding subsidy after rationalization	C+export charge
pig iron			19,022	16,550
bar	23,400		35,580	27,820 30,880
plate	30,600		39,170	30,610 33,490
sheet	43,200		44,460	37,200 42,960
pipe	50,400		61,065	48,400 51,610

Rationalization plan of coal and steel industries by
Council for Industrial Rationalization(1950)

	1950	1953
steel		
international price	21,600	21,600
total cost	25,230	24,300
index of processing cost	100	76
required coal price		
coal for blsst furnace		3,000
coal for open hearth		2,900
coal for other purpose		2,500

Source: Council for Industrial Rationalization .

3 Years Investment Plan by the Industrial Rationalization Council

million yen

iron and steel	total	42,031
	blast furnace	6,259
	steelmaking	4,098
	rolling	26,465
	power	2,055
	transportation	1,592
	housing etc.	1,561
coal	total	40,000
	machine	10,173
	others	29,827

source: Iron and Steel Branch, "Target and Measure of Reducing the Iron and Steel Cost";
Coal Branch, "On rarionalization of the Coal Industry."

Plan of Funds Allocation by MITI(1950)

million yen

	demand	raising plan		debenture	private loan	public loan
	total	total	capital			
iron and steel	9,852	8,475	1,508	1,257	3,200	2,510
coal	11,336	9,756	1,922	1,144	2,342	4,348
electricity	34,920	33,155	1,563	4,195	5,106	22,291
mining	13,523	12,053	741	2,540	7,922	850
chemical	20,181	18,264	1,210	1,648	12,751	2,655
machinery	4,195	4,087	101	747	3,039	200
textile	10,341	9,943	263	1,373	7,107	1,200
miscellaneous goods	7,728	6,187	273	481	5,226	207
gas and coke	4,721	4,621	500	520	3,601	0

source: Industrial Funds Section of MITI, "Table of Demand for Industrial Funds in 1950,"
in Ishikawa Papers.

Membership of the Funds Section of the General Branch

Nobuo Noda	Seikei University
Teizo Horikoshi	Federation of Industrial Associations
Sohei Nakayama	Industrial Bank of Japan
Hiroshi Hara	Bank of Japan
Mansaku Takeda	Nihon Kangyo Bank
*** Nakamura	Chiyoda (Mitsubishi Bank)
Hideo Kajiura	Industrial Bank of Japan
Yusuke Saito	Association of Chemical Industry
Toru Kondo	Mitsui Mining Co.
Teiichi Yamaguchi	Yawata Steel Co.
*** Iwata	Tokyo Shibaura Electric Co.
Torao Nakaya	Federation of Industrial Associations
Goro Koyama	Teikoku (Mitsui) Bank

source: "Record of the First Meeting of the Funds Section of the General Branch,"
in Ishikawa Paper K47-1.