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Abstract

In this paper we will make clear the institutional framework and function of the foreign exchange allocation system in 1950's Japan. Until trade liberalization progressed in the first half of 1960's, MITI executed *de facto* import quota by means of this system, which generated substantial amount of rent. In order to restrain rent-seeking activities, MITI set clear and objective criteria for foreign exchange allocation by firm, which were in many cases based on export performance and production capacity of each firm, and announced them publicly. This method caused competition to acquire rent thorough foreign exchange allocation among private enterprises, and promoted export and investment. We will quantify the criteria using firm-level data of foreign exchange allocation and also analyze their function through estimating export and investment functions.

1. Introduction

The Japanese foreign trade regime was substantially different from the present form until the beginning of 1960's. Before 1949 foreign trade was controlled directly by the government, and still more there was not a single exchange rate. Although direct control was abolished and a single exchange rate was set as a part of the wide range of policies for transition to a market economy in 1949, a new system to control foreign trade, that is, the foreign exchange allocation system was introduced. The Japanese government could execute *de facto* import quota through this system. This regime continued to work until trade liberalization progressed facing the pressure from overseas in early 1960's.

It is widely admitted that this indirect trade control through the foreign exchange allocation system was operated as a measure of the sectoral industrial policy as well as of the macro-economic policy to keep balance of payments. For instance, official history of the Ministry of International Trade and Industry (MITI et al. [1994]) states as follows.

> It (import control) aimed at effective use of the limited foreign currency to the economic development, and it enabled to secure necessary import goods preventing the rush of import. Through foreign exchange allocation and approval of import, MITI could monitor the industries under jurisdiction and carried out administrative guidance necessary for their development.

Kosai [1989] also counted the foreign exchange control as a sectoral policy measure first of all. The foreign exchange allocation system generated rent through making difference between domestic and foreign prices, and exerted substantial economic and political influences. The rent generated by the government intervention has been criticized on the ground that it causes rent-seeking activities of the private sector on one hand, and on the other hand, recently it has been focused that rent can be an effective industrial policy measure, if appropriate institutional arrangements are

provided (Aoki, Murdock, and Okuno-Fujiwara [1996]). Taking into account that not a few developing and transforming countries have not liberalized foreign trade, and that they are faced with serious rent-seeking problem, we can say that the Japanese experience of foreign exchange control has large relevance.

However, there are few researches investigating the function of the foreign exchange allocation from economic standpoint, except official histories of the MITI (MITI et al [1990]) , Ministry of Finance (MOF[1976]) and Inuta[1981] by the author of MOF[1976] describe the details of the institution. Kosai[1989] only mentions the import restriction of the dynamo and the passenger cars by several lines. Fukao et al[1993] and Nakakita [1993] also appropriate only one page to the description of the foreign exchange allocation system respectively. Recently Takagi[1996] explained the foreign exchange allocation system in detail, and also analyzed its function from macro-economic standpoint.

Therefore in this paper we will analyze the institution and the function of the foreign exchange allocation in 1950's Japan focusing on the sectoral and micro aspects. In section 2 outline of the foreign exchange allocation system will be explained briefly. In section 3 we will analyze its operation and function concerning the macro-economic aspect and allocation by goods. In section 4 the criteria of allocating foreign exchange to firms will be made clear. In section 5, we will analyze its operation and function concerning allocation by firm using firm-level data. Section 6 concludes the paper.

2. Foreign Exchange Budget and Foreign Exchange Allocation System

The Foreign Exchange and Foreign Trade Administration Law (Gaikoku kawase and gaikoku boeki kanri ho), which was enacted in December, 1949, provided a new institutional framework of foreign trade taking the place of direct government

control. Article 1 of the law prescribed that its purpose was developing normal foreign trade, and administrating foreign exchange and foreign trade; in order to securing balance of payments, stabilization of the currency value, and effective utilization of foreign currency (MOF[1976], p.616). It shows that such a micro-economic item as the effective use the foreign currency was originally included in the purposes of the law.

For these purposes the law prescribed concentration of the foreign exchange and the foreign exchange budget system (gaika yosan seido). All the foreign currency, precious metals, claimable assets in foreign currency, and foreign currency securities should be concentrated to the government, Bank of Japan, or the foreign exchange bank. The government should make the foreign exchange budget to efficiently use the concentrated foreign currency (Bank of Tokyo[1960], p.2).

The foreign exchange budget system is explained in Bank of Tokyo[1960], Shimada [1960], MOF[1976], Inuta[1981], MITI et al[1990] and Takagi[1996]. We are going to summarize the outline of the system mainly by Bank of Tokyo[1960]. The foreign exchange budget was made from January, 1950, at first quarterly and afterwards every half year. It consisted basically of three parts, that is (a) summary table, (b) the foreign exchange budget of the import goods, and (c) the foreign exchange budget of the services, though details of the forms differed by term[1]. In (a), summary tables of (b) and (c), the foreign exchange rates, and a prospect of the balance of payments were shown.

(b) was a core of the foreign exchange budget, and it consisted of the budget of the foreign exchange allocation system (gaika wariate sei) goods (FA goods), the budget of the automatic approval system (jido shonin sei) goods (AA goods), and reserve budget[2]. The division between the FA goods and the AA goods was crucial. The

budget of AA goods was allocated in the lump to the AA group of the goods, and import of the AA goods was automatically approved as long as the budget of AA goods was left. In other words, as to AA goods, import was *de facto* free within the total limit. Accordingly, the liberalization rate of foreign trade was usually defined as the ratio of the budget of the AA goods to the total budget.

On the other hand, in order to import the FA goods, one should apply to the Minister of International Trade and Industry at each dealings *ex ante* and should receive allotment of foreign exchange. Moreover, the foreign exchange budget of the FA goods was allocated not in the lump but to each goods, and Minister of International Trade and Industry should allocate foreign exchange to the importers within the limit determined as to each FA goods. Therefore, as to FA goods quantity of import was basically determined by the foreign exchange budget. This means that the government had the power of wide-ranging quantity restriction of import.

The foreign exchange budget was decided by the Cabinet Ministers Council (Kakuryo Shingikai), which consisted of the Prime Minister, Ministers of Foreign Affairs, Finance, Agriculture and Forestry, International Trade and Industry, Transportation, and Secretary of Economic Planning Agency[3]. The draft of the budget of import and services incidental to import was made by MITI, and the budget of other services was made by MOF[4].

Making the budget of import, MITI used the estimated amount of foreign exchange which could be spent in each term. That amount was calculated on prospects of export, special procurements by the US Army, balance of services trade, and targeted balance of payments. MITI allocated this amount to the AA goods and each FA goods. The import procedure after the foreign exchange budget was decided continued with (a) import proclamation (yunyu kohyo) by MITI, (b) import

announcement (yunyu happyo) by MITI, (c) foreign exchange allocation by MITI, (d) import approval (yunyu shonin) by foreign exchange banks, (e) letter of credit establishment by foreign exchange banks, and (f) import bill settlement by foreign exchange banks. (b) and (c) relates only to the FA goods.

By import proclamation, a list of the AA and FA goods, currency for settlement, and the areas where certain goods were to be shipped was announced. Because the import approval by foreign exchange banks was done directly on import proclamation about the AA goods, import proclamation was especially important concerning the AA goods[5]. On the other hand, concerning the FA goods, import announcement was separately done for each goods based on the import proclamation. The contents of the import announcement were the place where applications for foreign exchange allotment should be handed, time limit of application, applicant's qualification, and the foreign exchange allocation criteria (gaika shikin wariate kijun), etc. The foreign exchange allocation criteria showed the rule of the foreign exchange allocation by firm, which will be discussed in section 4.

According to the import announcement, each firm which wanted to import the FA goods handed an application for the foreign exchange allocation (gaika shikin wariate shinseisho) to MITI. MITI decided allocation of the foreign exchange to each application referring to the budget,and the foreign exchange allocation criteria. Then the foreign exchange allocation certificate (gaika shikin wariate shomeisho), which was valid for four months, was delivered to the applicant in case the Minister of International Trade and Industry had decided to allocate the foreign exchange. A substantial procedure of the import administration ended by foreign exchange allocation (Shimada[1960], p.170).

3. Movement of the Foreign Exchange Budget and Its Allocation by Goods

3.1 Macro-economy and the Foreign Exchange Budget

The exchange rate of the yen and the trend of the balance of payments in 1950's to 1960's are summarized in Figure 1. Japan, which had shifted from a regime of plural exchange rates to a regime of single exchange rate in April, 1949, maintained the fixed exchange rate of 360 yen per dollar until August, 1971. Change of the real exchange rate measured by export goods in this should be paid attention. The real exchange rate appreciated rapidly in early 1950's, and it continued to be higher than 360 yen per dollar until the end of 1950's. After it stayed around the level a little lower than 360 yen per dollar for several years, it depreciated rapidly since the latter half of 1960's. While even in 1949 it was said to be overvalued, the inflation during the Korean War increased the degree of overvaluation. Until the first half of 1960's the Japanese economy was frequently faced with great current balance deficit (Figure 1), while there remained large latent unemployment. These facts suggest that the rate of 360 yen per dollar was higher than equilibrium level until the first half of 1960's. Also, we found data on black market rate of the yen in 1950 s surveyed by the Bank of Japan, though they are rather fragmentary (Figure 2). The black market rate was over 400 yen per dollar. Overvaluation of the yen was a macro-economic background of the adoption of the foreign exchange budget system.

The first column of Table 1 denotes the total amount of the foreign exchange budget. The foreign exchange budget was tightened from 1954 to the first half of 1955, and was expanded rapidly from the latter half of 1955. Then it was tightened again from the first half of 1957 to 1958, and the long expansion started in 1959. The background of these changes in the foreign exchange budget scale was as follows.

The purpose of tightening in 1954 was to cope with current balance deficit

from 1953 (Figure 1). In the foreign exchange budget of 1954, the budget for "nonessential" goods was cut, and the policy of substituting domestic raw materials for imported raw materials was pursued, while the budget for raw materials of processing trade and for the raw materials whose prices were rising rapidly was expanded (Bank of Tokyo [1960], pp.215-217). The current balance was recovered in 1954, and the surplus was expected to continue for the time being. Taking this situation into account, the government took the policy to make a large-scale foreign exchange budget in order to support the expansion of the export and production from 1955 to 1956 (*Ibid*, pp.218-223).

However, in early 1957 the balance of payments turned to deficit, and the confrontation on the policy of making the foreign exchange budget took place between the relating authorities. MITI insisted that a large scale foreign exchange budget should be continued coupled with tightening of fiscal policy on the ground that contraction of the budget would cause speculative advances in prices and decline of the export. On the other hand, MOF and Bank of Japan stressed that it was necessary to reduce import directly by reducing the foreign exchange budget as well as by tightening the fiscal policy, because the balance of payments deficit was quite serious. Consequently the foreign exchange budget for import of the first half of 1957 was determined with a scale slightly below that of the previous term[6].

Making the foreign exchange budget of the latter half of 1957, MITI and MOF agreed with reducing the scale of budget as long as possible, under the circumstance of large balance of payments deficit. Although there remained disagreement about the prospect of receipts between the two ministry, the foreign exchange budget of the latter half of 1957 was determined to be substantially smaller than that of the previous term[7].

The balance of payments turned to surplus in the latter half of 1957, which

provided the condition to extend the foreign exchange budget. However, this time MITI requested the compression of the budget in order to adjust demand and supply in each industry. Although MOF and Economic Planning Agency insisted to expand the foreign exchange budget from a standpoint of the long-term economic plan, the foreign exchange budget of the first half of 1958 was decided to be still smaller than that of the previous term[8]. Also as to the foreign exchange budget of the latter half of 1958, the industrial society requested to reduce the scale, and it was not expanded substantially[9]. After the latter half of 1958, as the Japanese economy entered the large boom with surplus in the balance of payments, the foreign exchange budget continued to increase until 1961 (Bank of Tokyo[1960], pp.229-231).

Next, let's see the allocation of the foreign exchange budget between the AA goods and the FA goods (Table 1). The ratio of the AA budget to the total budget (import liberalization ratio) decreased below 20% in 1953. After gradual recovery from 1956, it rose rapidly in the early 1960's. From 1953, under the tightening of the total foreign exchange budget, several goods which had been classified to the AA goods, such as raw cotton, iron ore, crude sugar were converted to the FA goods (Inuta[1981], p.181). In making the foreign exchange budget of the first half of 1957, the government took the policy to increase the number of AA goods, and not to convert the AA goods to the FA goods due to the situation of balance of payments in future (Bank of Tokyo [1960], p.221). Then the recovery of convertibility of the European currency at the end of 1958 spurred the trade liberalization in Japan. In making the foreign exchange budget of the first half of 1959, the Japanese government decided to promote trade liberalization, and in June, 1960 the Cabinet agreed with the "Liberalization Plan of Trade and Foreign Exchange" (Boeki Kawase Jiyuka Keikaku Taiko), which announced that the liberalization ratio should be raised to 80% in three years. The

rapid increase of the liberalization ratio in early 1960's was based on this Plan[10].

3.2 Allocation of the Foreign Exchange Budget by Goods and Generation of Rent

The foreign exchange budget of the FA goods was allocated to each goods as explained in section 2. Table 2 shows the composition ratios according to the classification of the large item in the foreign exchange budget. Foods and textiles had the largest weight, but their weights were decreasing. On the other hand, the weights of petroleum, machinery, and the raw materials of steel increased. It can be said that the change in the composition of the foreign exchange budget basically reflected the change in the industrial structure. However, examining the change in detail, we can find that there existed various policy factors. Hereafter, we are going to examine allocation of the FA budget by goods from the latter half of 1956 to the first half of 1958, on which detailed information of making the foreign exchange budget is available in the materials by Bank of Japan. Raw cotton, wool, steel and its raw materials, petroleum, and the machinery, which were items with a comparatively large budget allocation, will be taken (Table 3).

Raw cotton Allocation of the foreign exchange budget to the raw cotton was based on the cotton products demand and supply plan by MITI. Necessary production of cotton products was calculated from the estimated demand of cotton products and estimated change in their stock. And the level of production determined necessary raw cotton import, which in turn determined necessary foreign exchange budget with the estimated import price of raw cotton[11]. The budget of the latter half of 1956 is in favor of the opinion of the cotton spinning industry especially of large enterprises, which requested the reduction of the raw cotton import in order to support cotton products prices[12]. Concerning the budget of the first half of 1957, the cotton spinning

industry requested reduction of raw cotton import, but MITI did not agree with this claim and increased the foreign exchange budget allocation, because the margin of the cotton spinning industry was rather high[13]. However, in the first half of 1957, actual amount of foreign exchange allotment was by far below the budget, in order to reduce production of cotton products, and the import quantity in the budget of the latter half of 1957 was even smaller than that in the budget of the latter half of 1956[14]. Moreover allocation of the budget to raw cotton in the first half of 1958 was curtailed substantially to support production cutback by the administrative guidance[15].

Wool Allocation of the foreign exchange budget to the wool was based on the wool products demand and supply plan by MITI. Necessary production of wool products was calculated from estimated demand of wool products and estimated change in stock. And the level of production determined necessary wool import, which in turn determined necessary foreign exchange budget with the estimated import price of wool[16]. Allocation of the foreign exchange budget to wool was expanded from the latter half of 1956 to cope with the increase of domestic demand of the wool products. The government aimed at reducing domestic price of wool products and rent generated by the difference between domestic and import prices of wool[17]. Also in the first half of 1957, large amount of budget was allocated to wool[18], but actual amount of foreign exchange allocation was cut in order to reduce production of wool products. Allocation of the foreign exchange budget to wool in the latter half of 1957 and the first half of 1958 was compressed to support the production reduction of wool products[19].

Steel and Its Raw Materials Allocation of the foreign exchange budget to steel and its raw materials (iron ore, scrap iron, and pig iron) was based on the demand and supply plan of the steel by MITI. To cope with the rapid increase of the steel demand due to the expansion of investment, allocation of the foreign exchange

budget to steel and its raw materials was increased in the latter half of 1956 and the first half of 1957[20]. Because there was a bottleneck in the capacity of blast furnace, large amount of the budget was allocated to scrap, pig iron, steel ingot and steel products[21]. In the latter half of 1957, allocation of the budget was substantially reduced because of decrease in steel demand[22]. As decline of the steel price came to be serious, production cutback of crude steel and some kinds of steel products was started in accordance with the administrative guidance by MITI in March, 1958. Corresponding to this measure, MITI curtailed production plan of steel of the first half of 1958, and reduced allocation of the foreign exchange budget to steel and its raw materials[23].

Petroleum Allocation of the foreign exchange budget to the petroleum was based on the demand and supply plans of petroleum products by MITI. Demand of the heavy oil, volatile oil, kerosene, and light oil was estimated respectively, and from this necessary import of the crude oil and the petroleum products were calculated. MITI gave priority to the import of crude oil from the standpoint of the domestic refinement principle. However, as demand of heavy oil was especially large in Japan, substantial amount of foreign exchange budget was allocated to heavy oil[24]. In the first half of 1957, the budget for crude oil and heavy oil was increased, because of the serious shortage of water and coal for generating electricity[25]. Moreover, MITI guided the petroleum companies to make long-term contracts of chartering tankers to cope with the shortage of tankers caused by the Suez Crisis. As for the latter half of 1957, allocation of the foreign exchange budget to the petroleum was suppressed based on the prospect of the slow down of the demand increase, which in turn caused the excessive chartering problem[26]. Then in the first half of 1958, large amount of the foreign exchange budget was allocated to the petroleum as a countermeasure to the

excessive chartering problem[27].

Machinery As to the machinery, foreign exchange allocation according to the demand and supply plan was impossible, because the machinery had very large variety. The Bureau of International Trade (Tsusho-kyoku), MITI adjusted the claims for the budget from each bureau of MITI and each Ministry, based on survey on machinery demand of each industry under jurisdiction[28]. The claims from the bureaus of MITI and other Ministries were shown in Table 4. In the latter half of 1956, large amount of machinery import was applied from such sectors as steel, machinery, transportation and electricity etc. because of rapid investment increase. MITI took the policy to keep the foreign exchange budget for machinery at almost the same level as the previous term, and cut off about 10 % of the demand (Table 4)[29]. Concerning allocation of the foreign exchange budget to machinery, the machinery users were inclined to prefer imported machinery on the ground of high quality, availability of low makers' loan with low interest rate and quick delivery. On the other hand, domestic machinery producers insisted that domestic machinery should be used as much as possible. MITI should keep balance between the rationalization of user industries and fostering the machinery industry[30].

In the first half of 1957, although demand of the machinery was still large, MITI curtailed 34% of the application, expecting that investment would be postponed due to the constraint of fund raising. In making the foreign exchange budget, the Bureau of Heavy Industry, MITI insisted to reduce the budget, while the Bureau of International Trade, MITI had the opinion that there were large possibility to allocate additional budget in the course of the term[31]. This confrontation of both bureaus reflected the above-mentioned problem of balance.

In the latter half of 1957, MITI curtailed 22% of the application (Table 4), on

the ground that the effect of the tight monetary policy should gradually come out, and investment for rationalization of the industries reached the peak because of the rapid increase of the machine import in the past two or three years[32]. Moreover, in the first half of 1958, the foreign exchange budget for machinery was reduced to the lowest level since the latter half of 1955. Protection of the domestic producers was one of the reasons[33].

Above explanation shows that in the cases of raw materials, the demand and supply plan of each good by MITI was used as a base. Also it was shown that there was often a case where allocation of the foreign exchange budget was restrained for the purpose of industrial policy. Because restraint of the foreign exchange budget for the FA goods was de facto import quota as stressed in section 2, it is probable that as to many of the FA goods rent was generated. We can roughly measure the scale of rent by subtracting the tariff from the difference between domestic and import prices of each goods. We estimated the scale of rent as to 27 goods, whose weight were relatively high in the wholesale price statistics by Bank of Japan and whose cif. import prices are available in the customs clearance statistic by MOF. The result is shown in Table 5. As to 15 goods of 27 goods, rent was generated, and the rent was especially large regarding automobile, volatile oil, refined wheat, wool, and flour[34].

4. The Criteria of Foreign Exchange Allocation and the Methods of Allocation by Firm

Allocation of the foreign exchange to firms meant allocation of the rent generated by restriction of import. Therefore, there was a substantial possibility that allocation of the foreign exchange to firms caused rent-seeking activities of the private sector and corruption of the bureaucracy and political circle. And at the same time it

might be an effective measure of the industrial policy. Concerning the first possibility, some then bureaucrats of MITI talked in retrospect that MITI was faced with a strong political pressure about the foreign exchange allocation. One of them, who served as a chief of the Budget Section (Yosan-ka) of the International Trade Bureau in 1950 s said that he daily received petitions and pressures from the Diet members, and that to repulse it was a main role of the chief of the Budget Section. Moreover, another then bureaucrat who was a vice-chief of the International Trade Bureau in 1950's said that several Diet members always came to the Vice-minister's office to petition about the foreign exchange allocation[35].

Certain mechanism to evade such a political pressure was prepared in the foreign exchange allocation system, the outline of which was explained in section 2. MITI took the policy to reduce the range of its discretion as much as possible concerning the allocation of the foreign exchange to each firm as is discussed in Okazaki and Ishii [1996]. The manual of the foreign exchange allocation system which was written by the authorities of MITI in 1960 states as follows (Shimada[1960], p.158).

Although the foreign exchange allocation is prescribed to be Minister of International Trade and Industry's discretion in the Foreign Exchange and International Trade Administration Law, it does not imply that the Minister determines the allotment case by case arbitrarily. MITI determines a certain criterion concerning each goods referring to the purpose of classifying it as FA goods, and allots the foreign exchange mechanically or screens the applications according to the criterion.

It can be said that MITI intended to restrain rent-seeking by reducing the room of the discretion through making clear allocation criteria and announcing them beforehand. "A certain criterion" in the quotation above is the foreign exchange allocation criterion announced by the import announcement (see section 2). The foreign exchange allocation criteria concerning the main goods of the latter half of 1956

are arranged in Table 6. There were four kinds of allocation methods; that is the allocation to trading company (shosha wariate, AT), allocation to consuming company (juyosha wariate, AC), allocation to trading company on order (hacchusho hosiki shosha wariate, ATO) and allocation to trading company on notification(naijisho hoshiki shosha wariate, ATN).

AT was a method to allocate the foreign exchange based only on the conditions of trading companies, past import records in many cases, which was used concerning a part of sugar, lumber, a part of beef fallow etc. (Table 6). This was according to the view that the past import results showed the ability to achieve the import and this method would contribute to the long-term import trade relationship (Shimada[1960], p.178). By this method the rent was acquired by the trading companies.

By AC, the foreign exchange was directly allocated to the companies which used each import goods. ATO was a method based on the purchase order put out to the trading companies by user companies, and ATN was a kind of ATO in which MITI notified the order limit to each user company beforehand. In AC, ATN and ATO conditions of each user company, such as export records, production capacity and production, were used as the criteria (Table 6)[36]. Specifically, the criteria based on export records like those of raw cotton, wool, and pulp for chemical fiber were called export link system (yushutsu rinku-sei). By AC, ATN and ATO, rent was acquired by the user companies.

It is notable that in many cases the criteria were based on clear and objective conditions . This is a fact which proves the point of above-mentioned Shimada[1960][37]. Also, this fact supports the view of "creating contests" of World Bank[1993]. The main point of this view is that the another type of competition that is contest-based competition with clear rewards, rules, and the referees in the east Asian countries

including Japan. In the foreign exchange allocation system, rent obtained by receiving the allocation was attractive rewards for the private companies. To obtain more rewards, the companies had to win the competitions to achieve performance, the rules of which were above-mentioned criteria. And, MITI played the role of the referee who mechanically or strictly apply the criteria; that is the rules.

In addition, it is notable that the criteria are thought to have led the corporate behaviors in specific directions. The cases of the export or production capacity based criteria have especially large significance. In the former case, the rent by the foreign exchange allotment is thought to have played the role of the export subsidy. And in the latter case, it is thought that investment was promoted by the rent functioning as an investment subsidy.

These effects were clearly recognized by the persons concerned in those days. MITI intentionally used the export link system to promote export. For instance, Shimada[1960] states, "It is an effective export promotion measure" (pp.179-180). Nishimura[1955] by a bureaucrat of MOF states that the background of the introduction of the export link system to the textiles in early 1950's was decrease in the export by rise of domestic prices, and that the rapid increase of textile export in 1953-54 was mainly due to the effect of the export link system. All of the export link systems shown in Table 6 are the methods to allocate the foreign exchange for the raw materials based on the export performance of the products made by those raw materials. This method was specifically called raw materials link system (genzairyo rinku-sei). Besides this, there was a method to allot the foreign exchange for the raw materials based on the export performance of the products which had no input-output relation to those raw materials, which was called deficit-covering link system (shukketsu hosho rinku-sei) (Nishimura[1955]).

The deficit-covering link system was applied to the export of ship, the production plant, whale oil, raw silk, and canned foods etc. in 1953-54[38]. The companies which exported those goods were allotted the foreign exchange to import crude sugar. They acquired *de facto* export subsidy through selling the crude sugar to the sugar refining companies at the higher domestic price. The shipbuilding industry especially enjoyed the merit of this system. They cut down the export prices by this system and consequently the first export boom of ships took place in 1953-54. The deficit-covering link system was strongly criticized by the IMF research mission in 1954, and it was abolished in 1955. The criticism from overseas suggests that this system had large export promotion effect.

On the other hand, the criteria based on production capacity was not intending that the investment promotion but aiming at the leveling of the capacity utilization ratio. However, it was recognized that it had the effect of investment promotion. A bureaucrat of MITI wrote in an article of 1956, "The companies invested aiming at an increase in the amount of the import quota, because the method of foreign exchange allocation is based on the amount of equipment." (Hiramatsu[1956]). Moreover, Oriental Economist commented, "The over-investment in such as textile, sugar refining, and milling industries is mainly due to the raw materials allotment policy of the government based on equipment capacity[39].

5 A Quantitative Analysis of the Foreign Exchange Allocation by Firm: A Case of the Wool Spinning Industry

5.1 A Brief History of the Wool Spinning Industry

The Japanese wool spinning industry was contracted substantially during World War II. Although equipment was reconstructed in accordance with the

equipment restoration plan approved by the occupation authority (GHQ) in 1948, import of raw material was a crucial constraint on the restoration of the wool spinning industry (Textile Society of Japan[1958], pp.310-313). The import of wool was very little for a few years after the war, since the import of the raw materials in general was under strict constraint and priority was given to raw cotton among the textile materials. It was after 1949 when the trade agreement was concluded between sterling area nations that wool import got on the track (Wool Spinning Association of Japan[1987a], p.92).

Meanwhile, the wool import was shifted to private trade from state trade at the beginning of 1950. Simultaneously, MITI announced "Detailed criteria of allotment of the foreign exchange for wool import from January to March, 1950" (*Showa 25-nen 1-3-gatu yomo yunyu shikin wariate saimoku*). The substance of which was that a total amount of the foreign exchange budget for wool (9,613 thousands dollars) was divided into two parts: one for domestic demand (70%) and the other for export (30%). The former was allocated according to production capacity of each firm, while the latter was allocated according to export records of each firm (Wool Spinning Association of Japan[1987a], p.94, appendix, pp.24-25). It is notable that both the export records and production capacity were already used as the criteria.

In July, 1950 an important revision was introduced in the method of allocation. In the method adopted in January, 1950, the total amount of foreign exchange for the export and the domestic demand was set respectively beforehand, however, after July, 1950, the foreign exchange was preferentially allocated according to export records, with the remaining part allotted in consideration of the production capacity for the domestic demand[40]. The method after July, 1950 is generally called export link system of wool (Textile Society of Japan[1958], p.321).

Although the method of allocation was frequently revised after that, important revisions were made in August, 1953 and April, 1955, that is, before August, 1953 the foreign exchange was allocated *ex post* in accordance with the past export records, and after August, 1953 it was allotted *ex ante* according to the export plan of each firm and was adjusted subsequently in line with the actual exports. At the same time another system "achievement rewards" (*suiko hosho*) was introduced, it was relevant to the above revisions in order to increase export incentives[41]. Additional foreign exchange was allocated to each firm according to the achievement ratio of the export plan. The revision in April, 1955 was to cope with the problems arose in the revision of 1953. The method adopted in 1953 greatly stimulated exports. It was criticized by the foreign countries and gave rise to shortage of wool in the domestic market. Therefore in April 1955, export incentives were reduced by abolishing the achievement rewards and decreasing the ratio of the foreign exchange allocation to the export of each firm(Textile Society of Japan[1958], pp.325-326).

These methods and actual allocation were determined by the Hemp and Wool Section(*Mamo-ka*) until 1955 FY and the Silk, Wool and Chemical Fiber Section (Kinu Ke Kasen-ka) after that of the Bureau of Textile, MITI. We found almost complete collection of the original documents concerning the foreign exchange allocation for wool import made by those sections of MITI. Moreover, in those materials the records of exports and production capacity on firm basis are also available. Hereafter, we will quantify the foreign exchange allocation method on firm basis, and then analyze the effects of the method.

5.2 The Rule of Foreign Exchange Allocation and Measurement of Marginal Rent

First, we regress the amount of foreign exchange (in yen) allocated to each

firm against the amount of actual export (in yen) of the previous term of each firm and equipment capacity (in physical unit) using cross section data in order to examine how foreign exchange allocation was linked to these variables (Table 7). The sample firms are those with available data concerning foreign exchange allotment, export and production capacity[42]. The data are taken from the original documents of MITI.

Both coefficients of the export (α) and of the equipment capacity (β) show how much foreign exchange is additionally allocated in accordance with the growth of the exports and increase of equipment capacity of each firm. As indicated in high ad-R^2, the foreign exchange allocation to each firm is explained fully by its export performance and equipment capacity. This implies that the foreign exchange was allocated to each firm following a clear and objective rule discussed in the previous section. Moreover, it is notable that the movement of the coefficient α reflects the above-mentioned revision of the allocation method, that is, the rise of α from the first half of 1953 to the first half of 1955 roughly corresponded to the distribution method introduced in August, 1953 (Table 7). The method itself increases the allocation of foreign exchange to export on per yen basis.

Besides the coefficient α, difference between domestic and foreign price of wool affects the size of the incentive to export as well as investment under the foreign exchange allotment system. We quote domestic price of wool (P_d^w) from the wholesale price statistics by Bank of Japan, and its import price (P_i^w) from the customs clearance statistics by MOF. The difference between them is illustrated in Figure 3, and this price difference ($P_d^w - P_i^w$) denotes the size of rent per pound of wool import. This premium of imported wool is at least about 17% of its import price. When we assume the export price of wool products to be P_e^y, the allocation of the rent per pound of wool

yarn export then becomes $\alpha \cdot P_e^y \cdot \left(P_d^w - P_i^w\right)/P_i^w \left(= R_1\right)$. Similarly, the allocation of the rent per unit of spinning equipment becomes $\beta \cdot \left(P_d^w - P_i^w\right)/P_i^w \left(= R_2\right)$ with the physical unit adjusted.

Figure 4 and Figure 5 illustrate R_1 and the growth rate of the wool yarn export, and R_2 and the wool spinning equipment increase respectively. The data of export and investment are taken from the customs clearance statistics by MOF and the *Monthly Statistical Bulletin of Textile Industry* (Sen'i Tokei Geppo) by MITI. A rise of the growth rate of export in 1952-53 and equipment increases in 1956 suggest the relation between the size of rent and export ,as well as the relation between the size of rent and investment.

5.3 Estimation of Export Function

To test the former relation, we estimate a simple export function of the wool yarn. In addition to R_1, other factors affecting the flow of export must be also taken into consideration. Price variable and income variable, which are usually incorporated in export function, are in the ratio of foreign to domestic one in this case, because, in those days, Japanese domestic market of wool products were blocked, i.e., foreign and domestic market were separated. We also assume the United States' market to be foreign market because the U.S. had the largest share in Japan's export of wool yarn in most of those periods[43]. In addition to the above factors, the effects of other export promotion policies must be also considered. Here, we take into account the financial export subsidy offered by export advance bill system (*yushutsu maegashi tegata seido*) only, one of the systems of export priority financing in Japan. The reason is that the great amount of subsidies of that system flowed into trading companies or, if any, into producers through trading companies, and that many of major trading companies

assumed important role in exporting textile products in particular (Taisa[1989], p.211-2)[44].

Finally, the dependent variables is export volume of wool yarn and the independent variables are as follows, R_1, the relative export price of wool yarn (P_d^y/P_e^y), the ratio of U.S gross national products to Japanese one (NI_u/NI_j) and the rate of financial export subsidy by the above system (sub). All the variables but the subsidy rate are transformed to the form of the growth rate. A domestic price of wool yarn (P_d^y) is based on the whole sale price statistics by Bank of Japan and the export price (P_e^y) are available from customs clearance statistics by MOF. GNP of the United States is quoted from *The National Income and Product Accounts of the United States,1929-82* by U.S department of Commerce and converted to yen unit by the official exchange rate (1$=¥360). GNP of Japan is obtained from *White Paper on National Income* (*Kokumin Shotoku Hakusho*) by the present EPA. With regard to financial export subsidy, the subsidy rate is applied. It is the difference between the discount rate of Bank of Japan most favored commercial bill and that of Bank of Japan most favored export-advance-bill, both offered by commercial bank. Those data come into procession from *Economic Statistics Monthly* by BOJ.

The result is displayed in Table 8. The estimating method adopted is Ordinary Least Square[45]. The coefficient of R_1 is positive and statistically significant as expected, while the coefficient of the relative price and the relative income are insignificant. Concerning the financial export subsidy, the sign of the coefficient is positive but statistically insignificant[46]. This result implies that the movement of the wool yarn export was basically determined by the size of allotted rent , not by the fundamental variable and another policy mentioned above at least[47].

5.4 Estimation of Investment Function

The effect of the allocation method based on production capacity to investment cannot be tested simply by adding R_2 to usual independent variables of the investment function, the profit rate and the interest rate, since the size of rent affects the profit rate itself. Therefore, we first adjust the profit rate by extracting the values of rent due to R_2 from the profit itself, and then we regress the investment to the adjusted profit rates, the interest rate and R_2.

We assume the business profit plus depreciation expenses and the total asset of the wool spinning industry in *Analysis of Business Condition of Principal Japanese Companies* (*Honpo Jigyo Seiseki Bunseki*) by Mitsubishi Economic Research Institute to be the profit and the total asset[48]. When we assume K^y to be the equipment capacity, the value of rent due to R_2 is $R_2 \cdot K^y$. The adjusted profit rate is obtained by extracting $R_2 \cdot K^y$ from the profit and dividing the residual by the total asset.

Next, we regress investment to the adjusted profit rates, R_2 and the interest rate. The dependent variable is the increase of the wool spinning equipment. π denotes the adjusted profit rate, while i is the rate of interest. We assumed the financial costs over the total liability with interests of the wool spinning industry to be i from Bank of Japan's *Financial Statements of Principal Enterprises* (*Shuyo Kigyo Keiei Bunseki*)[49].

The results are exhibited in Table 9. We display two estimation results; OLS and Pagan(1974)'s Nonlinear Least Square[50]. These results are quite similar. The coefficient of R_2 is positive and statistically significant at 1 % significance level, while that of π is significant at 5 % significance level. Nevertheless, the coefficients of other variables are less significant statistically. It is noticeable point that the significance of

R_2 is greater than that of π in the decision in investment in statistical sense. This suggests that the effect of the investment promotion became larger since the allotment of the rent was linked to the equipment capacity.

5.Concluding Remarks

The foreign exchange allocation system functioned as one of the basic frameworks of the Japanese economy until trade liberalization progressed in the first half of 1960's. Main part of the import was under the *de facto* control by the government through this system, and MITI used this system as a tool of industrial policy. Consequently, as to many important goods, substantial amount of rent was generated. It is notable that the existence of rent, its danger and utility, were clearly recognized by the persons concerned. Therefore, MITI made clear and objective allocation criteria and committed to these criteria by announcing them publicly in order to restrain rent-seeking activities. This method caused competition to acquire allocation of rent among private enterprises. As the criteria, export performance and production capacity were often adopted. The former was a method intentionally adopted as an export promotion measure, and its effect was quantitatively confirmed as to the case of the wool spinning industry. The latter method had the effect to promote investment not only through pushing up the profit rate, but also by the fact that allocation of rent was linked with the equipment capacity. In short, the foreign exchange allocation system played the role of promoting export and investment through stimulating competition to acquire rent in postwar Japan.

To the above conclusions of this paper, certain qualifications should be added. First, the fact that the Japanese foreign exchange allocation system promoted export and investment restraining rent-seeking activities does not directly imply that the

Japanese policy regime was the best and should be transmitted to the present developing and transforming countries. The Japanese policy selection was under the historical conditions where devaluation of nominal exchange rate was difficult, that there existed an effective bureaucracy and supporting private trade associations (Okazaki [1996]), and so forth. Also we cannot deny there were problems in the Japanese system. Literal rent-seeking activities did exist even in Japan, and as mentioned above, additional incentive to invest caused excess capacity. Moreover, the export link system had effect to increase welfare of export companies and overseas consumers at the expense of domestic consumers[51].

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[1] The table of the budget of services receipts was also included before the first half of 1953 (MOF[1976], pp.278-279).

[2] The automatic approval system goods did not exist at first, and there was the first-come-first-served system (*senchakujun sei*) instead (MITI *et al.* [1990] ,p.121).

[3] The president of Bank of Japan participated in the Council as an advisory member.

[4] The Trade Bureau of the Economic Stabilization Board (*Keizai Antei Honbu*) made the whole foreign exchange budget until the Economic Stabilization Board was abolished in July, 1951(Foreign Exchange Section, Bureau of International Trade, MITI [1952]).

[5] The import announcement was abolished as to the FA goods in the latter half of 1959.

[6] Bureau of Foreign Exchange, Bank of Japan, *Gaikoku Kawase Yosan no Gaiyo* (*Abstract of the Foreign Exchange Budget*), the first half of 1957, pp.1-4.

[7] *Ibid.*, the latter half of 1957, pp.1-5.

[8] The Bureau of International Trade, MITI assumed that it was necessary to expand the foreign exchange budget prospecting recovery of the business, but the Bureaus in charge of the industries insisted to reduce the foreign exchange budget to stimulate recovery (*Ibid.*, the first half of 1958, pp.1-4).

[9] *Ibid.*, pp.1-4.

[10] On the process of the trade liberalization, see Takagi[1996], pp.20-30.

[11] Bureau of Foreign Exchange, Bank of Japan, *Yosan Hensei Jijo* (*Making the Foreign Exchange Budget*), the latter half of 1956, pp.113-120.

[12] *Ibid.*, p.123.

[13] *Ibid.*, the first half of 1957, p.80.

[14] *Ibid.*, the latter half of 1957, pp.94-95.

[15] *Ibid.*, the first half of 1958, pp.94-95.

[16] *Ibid.*, the latter half of 1956, pp.130-134.

[17] *Ibid.*, p.136.

[18] *Ibid.*, the first half of 1957, pp.85-86.

[19] *Ibid.*, latter half of 1956, p.105.

[20] *Ibid.*, the latter half of 1956, pp.174-175.

[21] *Ibid.*, the first half of 1957, pp.135-139.

[22] *Ibid.*, the latter half of 1957, pp.159-161.

[23] *Ibid.*, the first half of 1958, pp.133-134.

[24] *Ibid.*, the latter half of 1956, pp.208-209.

[25] *Ibid.*, the first half of 1957, pp.171-172.

[26] *Ibid.*, latter half of 1957, pp.189-191.

[27] *Ibid.*, the first half of 1958, pp.159-160.

[28] *Ibid.*, the latter half of 1956, pp.220-222.

[29] *Ibid.*, the first half of 1957, p.179.

[30] *Ibid.*, the latter half of 1956, pp.223-224.

[31] *Ibid.*, the first half of 1957, pp.188-190.

[32] *Ibid.*, the latter half of 1957, pp.198-199.

[33] *Ibid.*, the first half of 1958, pp.173-175.

[34] It was widely recognized that the foreign exchange allocation system generated rent. For example, Amaya[1962] written by vice-chief of the Planning Section, MITI, states "The foreign exchange allocation system promoted the accumulation of capital by two reasons, that is restriction of international competition and giving premium to the firms which were allotted the foreign exchange (pp.51-52). And Toshiyuki Miyauchi, a managing director of Itochu. Co. criticized in 1959 at the meeting of the Association of the Corporate Executive , "So far the foreign exchange allocation system was a center of the industrial policy, but the situation that import premium exist, when the European currencies recovered convertibility." (Okazaki et al.[1996], p.127).

[35] Interview to the MITI OB by the Research Institute of the Industrial Policy History.

[36] As there was quite wide variety of machinery, it was impossible to adopt such an objective criterion. Therefore, the Council of Import Machinery Allotment (*Yunyu Kikai Wariate Shingikai*) under MITI determined allotment to each application through the screening process referring to the industrial policy, the trade policy and the social policy etc.. The Council consisted of the staffs of the Budget Section and Import Section of the Bureau of Trade, the sections in charge of machinery industry, and the sections in charge of the user industries (*Yosan Hensei Jijo, op cit.*, the latter half of 1956, p.219).

[37] It will be tested quantitatively in the next section.

[38] *Ekonomisto*, vol. 33-7, pp. 17-21.

[39] *Toyo Keizai Shinpo*, vol. 2604, p.15.

[40] The Textile Bureau of MITI "Yomo Seihin Yushutsu Rinku Seido Yoryo," (Outline of Wool Products Export Link System), in *Yomo* (*Wool*), May and June, 1957, pp.3-4. There was difference in the ratio of the amount of the foreign exchange allotment to the amount of the export according to the kinds of the products.

[41] For details, see the Wool Spinning Association of Japan[1987], pp.104-106, appendix, pp.58-63.

[42] In regard to the foreign exchange allocation to production capacity, production capacity in each firm was counted by mule-conversion unit (*mule-kanzan sui*) before the latter half of 1954 but by real unit (*jitsu sui*) after the first half of 1955 (Wool Spinning Association of Japan[1987a], p.107-8). In the regression we use the unit actually adopted in each term

[43] The choice of U.S. as foreign countries is in part due to the availability of data. Though the major destinations of wool yarn export in those days were the United States and some other Asian countries, the biannual data of national income of the latter countries are not available for us. Moreover, since the pretty large share of export to those Asian countries were via Hong Kong, it is impossible to construct an appropriate mixture of foreign income variable.

[44] In respect to export promotion, it is generally acknowledged that Japanese government had various export promotion policy tools other than the foreign exchange allocation (Itoh and Kiyono, 1988). But there is also much difficulty in the use of sectoral and biannual data of those policy variables. Further extension to this direction is of interest.

[45] The only second-order serial correlation of residuals is found in OLS estimation, partly because of using the biannual data. The following results do not change even when we assume those serial correlation by Pagan (1974) method. It should be noted, however, that in this estimation, by using the poor income variable, the income effect is not well captured, thus some reservation must be required in interpreting the results.

[46] Other formula of the policy variables by that system, for example, the total value of the subsidies, were also tested but the results are similar.

[47] We have also estimated an export function of wool fabrics. The result is quite similar to the above one except the significance of the size of rent, R_1, which becomes a bit weaker. The difference in incentives of rent to those wool products export is probably due to the fact that the foreign exchange were allocated basically to wool spinning firms, not to wool weaving firms.

[48] Selection of sample firms is based on the availability of both financial data and export and equipment capacity data on firm basis. Then we aggregate these data in each term.

[49] When we use the user cost of capital as the cost variable, the main results in the following does not change.

[50] The only second-order serial correlation of residuals is found in OLS estimation at some degree, which is statistically significant at 20 % significance level in LM test proposed by Breusch and Pagan (1980). We apply Pagan (1974)'s method by assuming that serial correlation. While that is partly because of using the six months data, many researchers often found strong serial correlation of residuals in estimating investment functions.

[51] Muto[1960] by the chief of the Section of the Foreign Exchange, MOF, states that the allotment system and permission system averted the industries to petition to the

government office from a true business effort, and that it spoiled the industries through protecting them from the international competition. Nishimura[1955] pointed out that the deficit-covering link system of sugar caused a national loss through reducing the export prices of the machinery, and that the loss was imposed on the domestic consumers through rise of the sugar price.

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Table 1 Outline of the Foreign Exchange Budget

million of dollars, %

	Total	FA	AA	Reserve	AA/Total
1952	1,242	763	348	131	27.99
	1,501	988	494	19	32.89
1953	1,237	799	300	138	24.26
	1,546	1,250	274	22	17.75
1954	1,100	931	141	27	12.82
	1,090	913	175	1	16.06
1955	1,160	970	190	0	16.38
	1,454	1,218	236	0	16.23
1956	1,765	1,413	352	0	19.94
	2,483	1,969	513	0	20.66
1957	2,236	1,589	497	150	22.23
	1,652	1,242	330	80	19.98
1958	1,628	1,148	330	150	20.27
	1,757	1,161	470	125	26.75
1959	1,941	1,217	630	93	32.46
	2,328	1,581	700	47	30.07
1960	2,624	1,459	1,000	165	38.11
	2,800	1,480	1,150	170	41.07
1961	3,272	1,422	1,850	0	56.54
	3,526	1,526	1,800	200	51.05
1962	3,114	1,264	1,650	200	52.99
	3,154	774	2,380	0	75.46
1963	3,465	796	2,575	94	74.31
	3,815	705	2,860	250	74.97

Source: Bank of Japan, Gaikokukawase Binran (Handbook of the Foreign Exchange); Bank of Japan, Gaikoku Kawase Yosan no Gaiyo (Abstract of the Foreign Exchange Budget).

Table2 Allocation of FA Budget of Foreign Exchange by Goods I

%

	1953	1954	1955	1956	1957	1958	1959
Foods	31.32	29.01	25.96	16.15	18.35	19.47	14.44
Government monopoly goods	0.98	1.03	1.12	0.67	0.49	0.97	0.87
Lumber	0.00	1.72	0.89	0.79	0.46	0.89	1.77
Materials of daily necessaries	0.57	1.70	2.22	1.57	1.49	1.42	1.49
Textiles	32.72	31.59	29.26	23.81	26.76	27.65	25.40
Materials of fertilizer	1.92	2.23	2.22	1.93	1.34	1.37	1.23
Coal	2.47	2.71	2.93	3.34	4.65	3.47	3.42
Materials of steel	2.16	3.77	8.21	15.88	12.61	4.28	7.43
Non-ferrous metals	0.46	1.60	1.71	5.13	3.31	2.29	3.34
Petroleum	5.73	7.44	7.24	6.66	7.26	11.77	10.96
Chemicals	0.55	0.38	0.33	0.44	0.72	0.87	0.98
Medicines	0.60	0.37	0.28	0.17	0.24	0.27	0.27
Machinery	10.45	5.67	7.87	15.45	12.01	11.82	15.91
Others	10.06	10.79	9.77	8.01	10.32	13.46	12.49

Source: Bank of Tokyo[1960].
Notes: Ratio to the total FA budget.

Table3 Allocation of Foreign Exchange by Goods II

thousand of dollars

	1956	1957		1958
	Oct.-Mar.	Apr.-Sept.	Oct.-Mar.	Apr.-Sept.
Staple Foods	186,025	122,034	177,244	142,513
Soybean	48,105	48,000	33,600	40,425
Sugar	65,057	89,706	47,486	54,000
Salt	6,294	5,042	4,942	5,100
Lumber	12,360	6,942	6,000	10,662
Beef fallow	14,330	13,338	10,350	11,000
Hides	8,250	11,150	12,050	11,382
Raw cotton	198,122	216,275	215,300	204,639
Wool	121,000	124,800	141,500	73,500
Pulp for chemical fiber	10,626	14,370	7,010	7,752
Phosphorous ore	10,538	9,123	8,605	6,868
Potash	30,507	20,807	16,330	16,320
Raw materials for steel	159,810	288,503	68,500	57,400
Coal	57,683	82,237	49,363	38,777
Petroleum	104,982	103,616	93,470	141,000
Machinery	146,000	190,000	150,000	123,000

Source: Bank of Japan, Yosan Hensei Jijo (Making Foreign Exchange Budget), latter half of 1956-former half of 1958.

Table4 Claims for Foreign Exchange Budget by Ministries and Agencies

thousand of dollars

	1956	1957	1958	
	Oct.-Mar.	Apr.-Sept.	Oct.-Mar.	Apr.-Sept.
Total	157,430	288,661	193,529	189,461
(Ratio of Actual Allotment, %)	(92.72)	(65.82)	(77.51)	(64.92)
Bureau of Heavy Industry, MITI	66,382	119,689	54,222	88,202
Bureau of Textile, MITI	22,946	16,780	15,285	10,234
Bureau of Light Industry, MITI	11,159	24,967	19,000	12,939
Bureau of Enterprise, MITI	9,813	10,917	502	18,135
Bureau of Mining, MITI	9,745	11,362	8,968	9,159
Bureau of Public Utility, MITI	7,615	31,886	1,450	3,207
Bureau of Coal, MITI	n.a.	n.a.	2,330	2,329
Ministry of Transportation	n.a.	45,921	15,752	11,493
Ministry of Agriculture and Forestry	5,874	12,041	4,845	6,535
Agency of Defence	5,686	4,999	4,918	2,615
Ministry of Construction	n.a.	2,952	1,951	4,550
Agency of Science and Technology	n.a.	2,357	4,147	1,439
Ministry of Fiance	n.a.	n.a.	1,956	500
Ministry of Health and Welfare	n.a.	n.a.	1,000	1,148
Ministry of Education	n.a.	n.a.	1,000	400
Others	18,210	4,790	56,203	16,576

Source: Bank of Japan, Yosan Hensei Jijo (Making Foreign Exchange Budget), latter half of 1956-former half of 1958.

yen

Unit	A Domestic price	B Import cif. price	C Tariff	D B+C	E A/D
on	68,767	61,350	0	61,350	1.12
on	52,360	26,350	0	26,350	1.99
on	43,694	43,762	0	43,762	1.00
on	132,900	62,995	15,749	78,744	1.69
on	44,766	35,857	8,964	44,821	1.00
on	59,903	37,671	7,534	45,205	1.33
on	314,506	295,544	0	295,544	1.06
on	2,420,855	1,448,937	144,894	1,593,831	1.52
on	1,149,868	614,443	0	614,443	1.87
on	7,516	7,159	0	7,159	1.05
l	6,881	6,359	0	6,359	1.08
l	30,928	11,095	0	11,095	2.79
on	20,965	17,754	0	17,754	1.18
on	43,981	39,903	5,985	45,888	0.96
on	5,726	5,377	0	5,377	1.07
umber	1,015,000	174,190	52,257	226,447	4.48
umber	837,430	216,766	86,706	303,472	2.76
umber	197	316	47	363	0.54
ıз	11,749	19,766	0	19,766	0.59
ıз	8,306	14,169	0	14,169	0.59
ıз	11,225	17,391	0	17,391	0.65
on	3,600	3,839	0	3,839	0.94
on	168,112	261,442	39,216	300,658	0.56
on	507,867	2,023,691	505,923	2,529,613	0.20
on	64,903	73,704	7,370	81,075	0.80
on	78,814	71,323	3,566	74,889	1.05
on	42,160	35,368	0	35,368	1.19

i Nenpo (Staistical Year Book of the Wholesale Prices), 1955;
pyo (Year Book of the International Trade), 1955;
ɔan, 1955.

ange Allocation by Firm (latter half of 1956)

›y the consuming industry based on actual consumption in the first half of 1955,
ation in the first half of 1956, and desirable allcation
t in 1955
›y the trade associations of sugar refining industry besed on production capacity,
uction, and per capita rate.
t from July 1955 to June 1956
t from July 1955 to June 1956
t (export link), actual consumption in the latter half of 1955, actual production in
ɐr capita rate
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ase
t (export link)
t (export link) and production capacity
t (export link) and production capacity
t (export link)

ction and production plan

n exchange allotment and actual import in the last three years
n exchange allotment and actual import in the last three years
·eening by the Council of Machinery Import

aking Foreign Exchange Budget), latter half of 1956.
on order

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Table 7 Determination of Foreign Exchange Allocation for Wool Import by Firm

Fiscal Year	Export performance (α)	Production capacity (β)	ad-R2	Number of sample (Number of firms)
1951 Apr.-Sept.	1.582 (2.185)	10,577 (5.213)	0.965	13
Oct.-Mar.	0.827 (2.179)	21,848 (4.453)	0.989	18
1952 Apr.-Sept.	1.234 (3.617)	10,097 (12.556)	0.994	13
Oct.-Mar.	1.206 (1.414)	23,627 (7.880)	0.974	10
1953 Apr.-Sept.	1.903 (7.196)	5,278 (5.114)	0.992	19
Oct.-Mar.	1.978 (8.580)	9,251 (12.699)	0.996	21
1954 Apr.-Sept.	0.689 (9.643)	3,140 (4.342)	0.987	45
Oct.-Mar.	1.319 (4.111)	4,621 (1.268)	0.944	47
1955 Apr.-Sept.	1.732 (28.481)	4,484 (10.860)	0.998	47
Oct.-Mar.	1.275 (15.543)	13,533 (13.958)	0.996	55
1956 Apr.-Sept.	0.319 (2.121)	23,458 (13.195)	0.967	50
Oct.-Mar.	1.487 (12.585)	28,759 (18.522)	0.993	54
1957 Apr.-Sept.	0.293 (6.248)	7,639 (12.137)	0.981	54
Oct.-Mar.	1.066 (10.352)	16,702 (11.691)	0.984	51
1958 Apr.-Sept.	0.989 (16.461)	8,043 (13.237)	0.985	44
Oct.-Mar.	0.738 (29.118)	9,078 (35.950)	0.991	64
1959 Apr.-Sept.	1.134 (25.606)	381 (4.777)	0.933	63
Oct.-Mar.	0.825 (17.768)	17,594 (33.330)	0.992	50
1960 Apr.-Sept.	0.561 (14.034)	15,148 (24.350)	0.977	45
Oct.-Mar.	0.691 (21.758)	7,904 (29.200)	0.985	59

Note: t-values are in parentheses.

Table 7 Estimation of the Export Function

R1	Pye/Pyd	Nlu/Nij	sub	constant	ad-R2	DW
0.279**	-0.229	0.370	108.9	-180.1	0.397	1.803
(3.716)	(-0.283)	(0.263)	(0.662)	(-1.552)		

Notes: t-values in parentheses.
** Siginificant at the 1 percent level.

Table 8 Estimation of the Export Function

	R1	Pye/Pyd	Nlu/Nij	sub	constant	ad-R2	DW
OLS	0.279**	-0.229	0.370	108.9	-180.1	0.397	1.803
	(3.716)	(-0.283)	(0.263)	(0.662)	(-1.552)		

Notes: t-values in parentheses.
** Siginificant at the 1 percent level.

Table 9 Estimatiom of Investment Function

	π	R2	I	constant	ad-R2	DW
OLS	28.930*	37.927**	-169.587*	622.690	0.275	2.228
	(2.432)	(2.737)	(-1.764)	(1.466)		
Pagan(1974)	27.311*	38.376**	-120.756	403.966	0.343	
	(2.516)	(3.165)	(-1.330)	(1.032)		

Note: t-value are in parentheses.
** Significanct at 1 percent level.
* Significant at 5 percent level.

Figure1 Exchange Rates and Balance of Payments

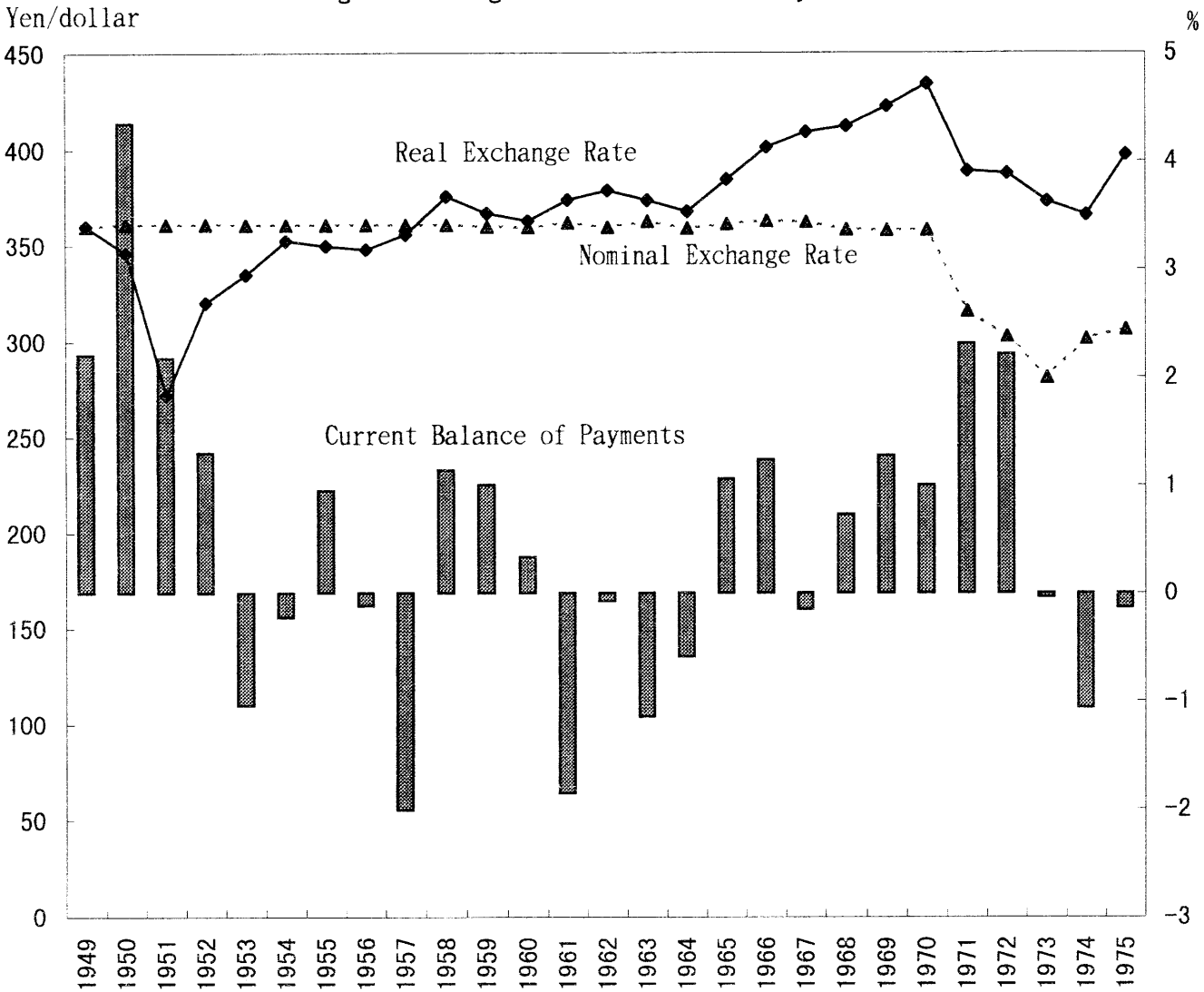

Figure1 Exchange Rates and Balance of Payments

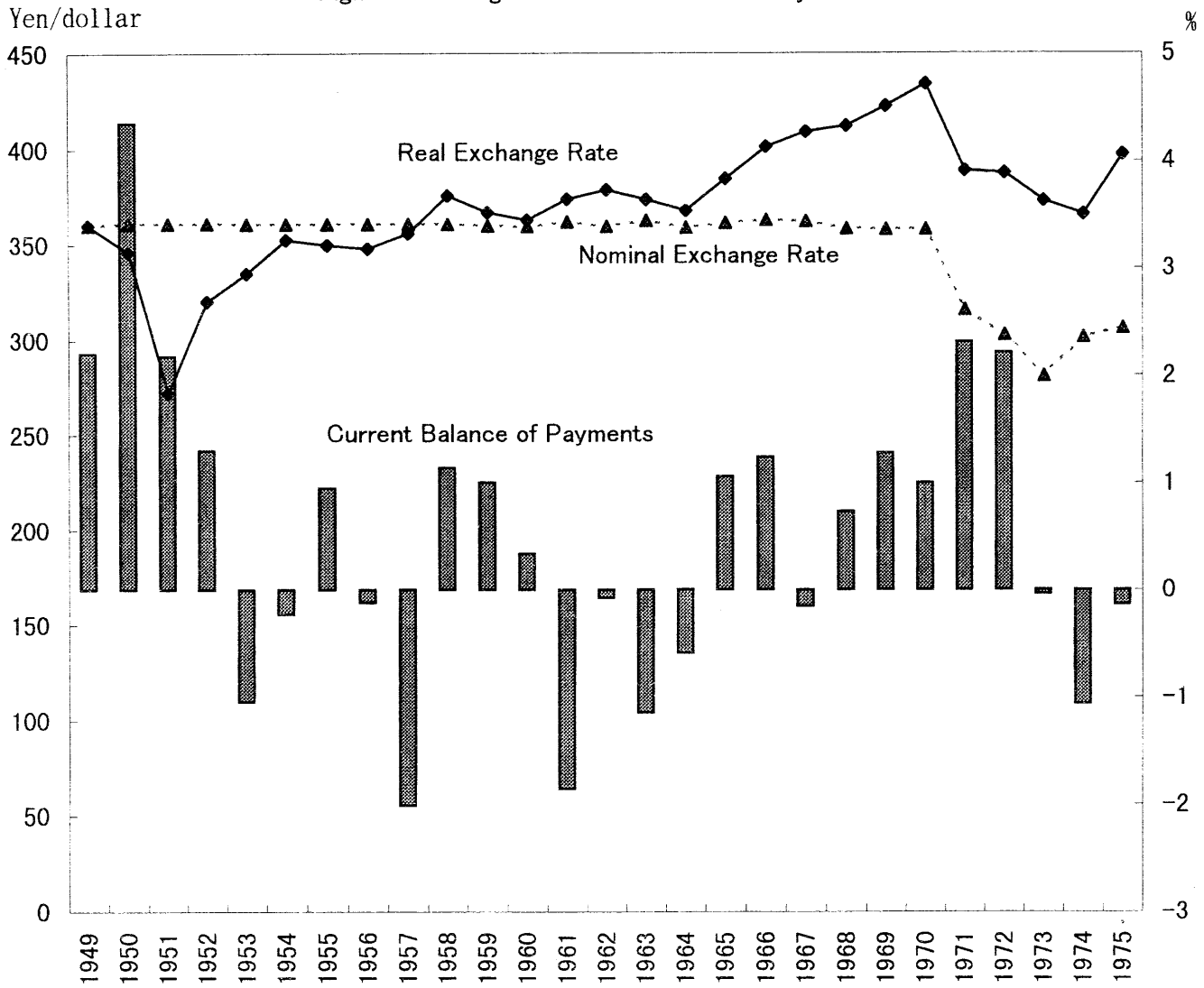

Figure 2 Black Market Rate of Yen

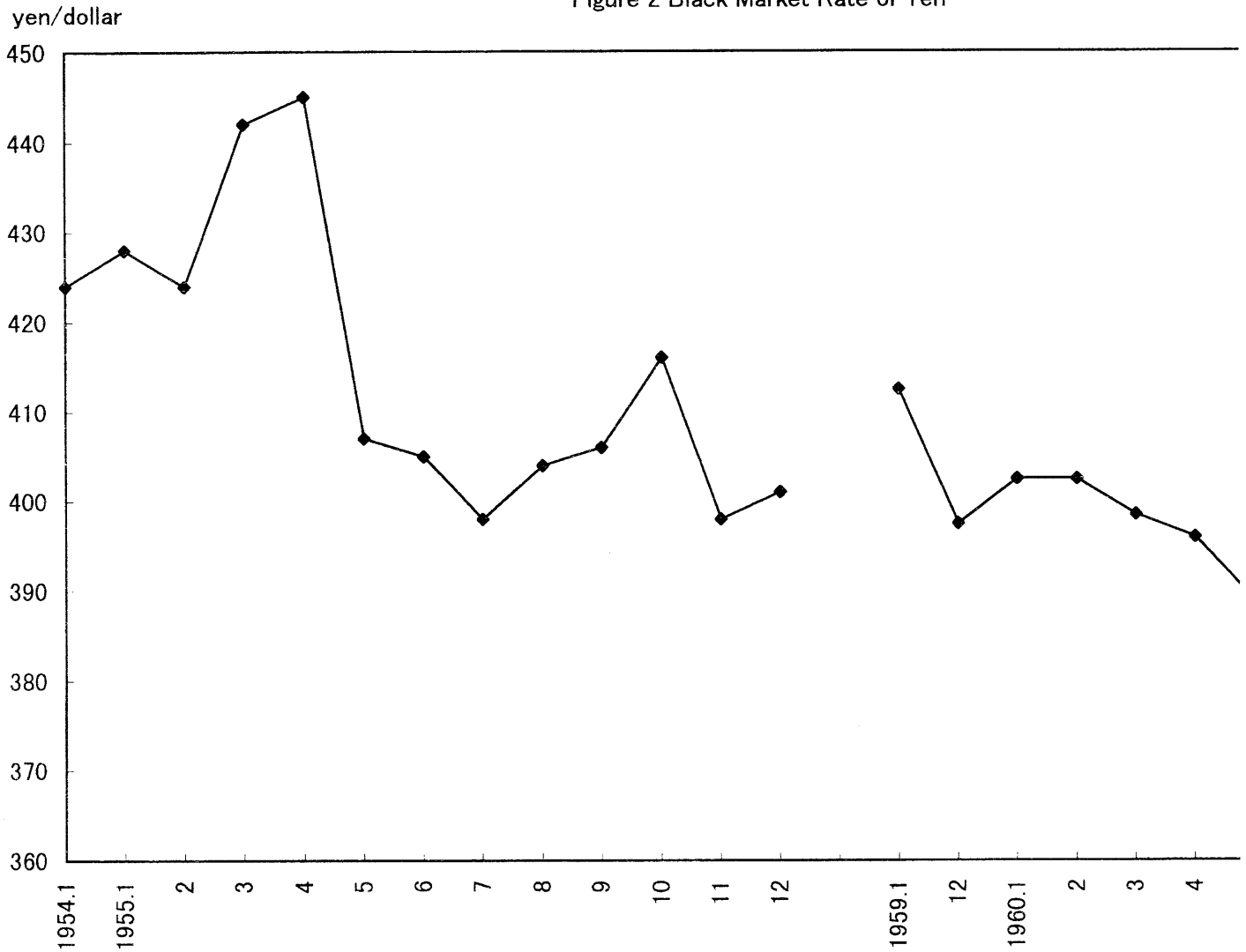

Figure 3 Difference between Domestic and Import Price of Wool

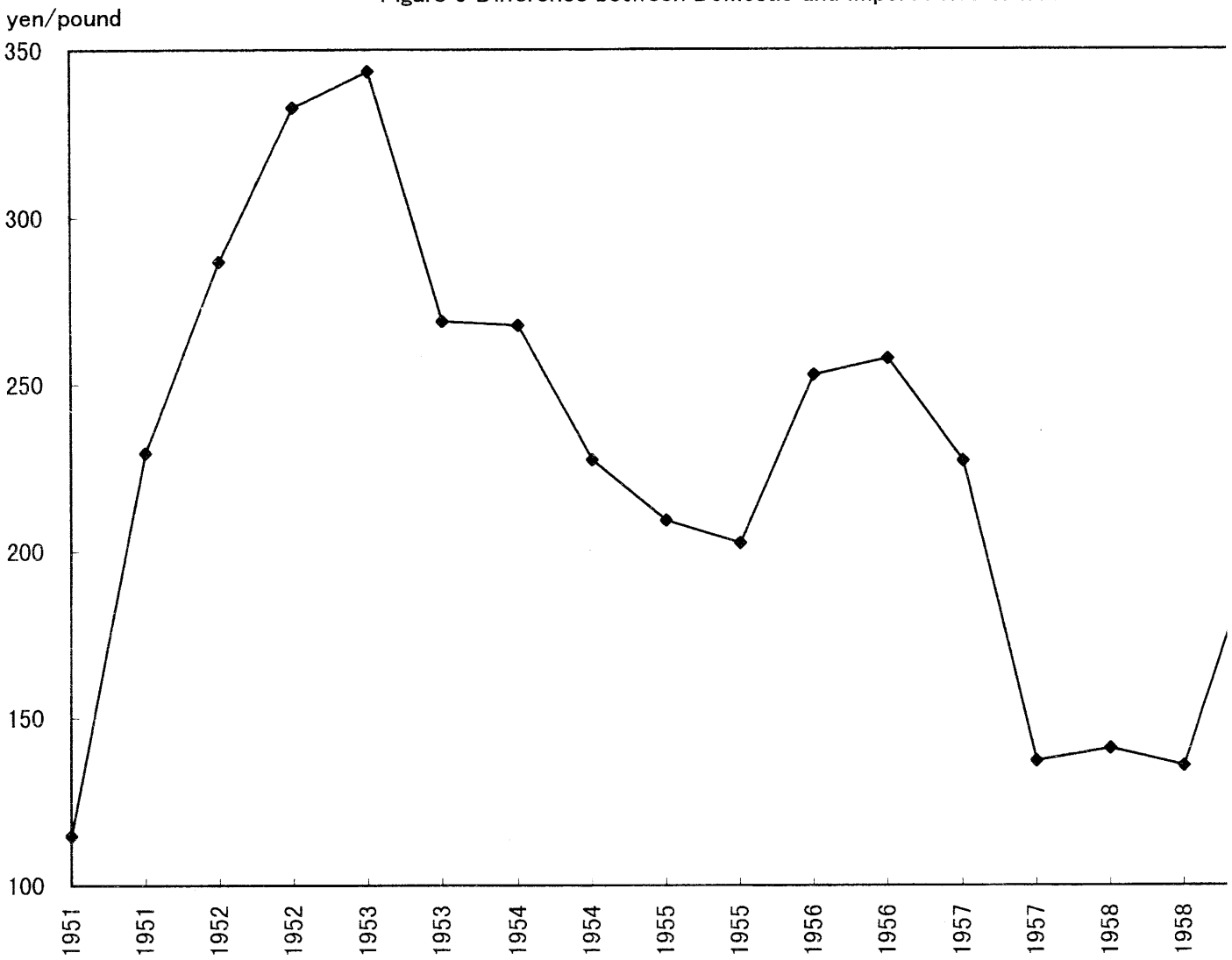

Figure 4 Rent (R1) and Export of Wool Yarn

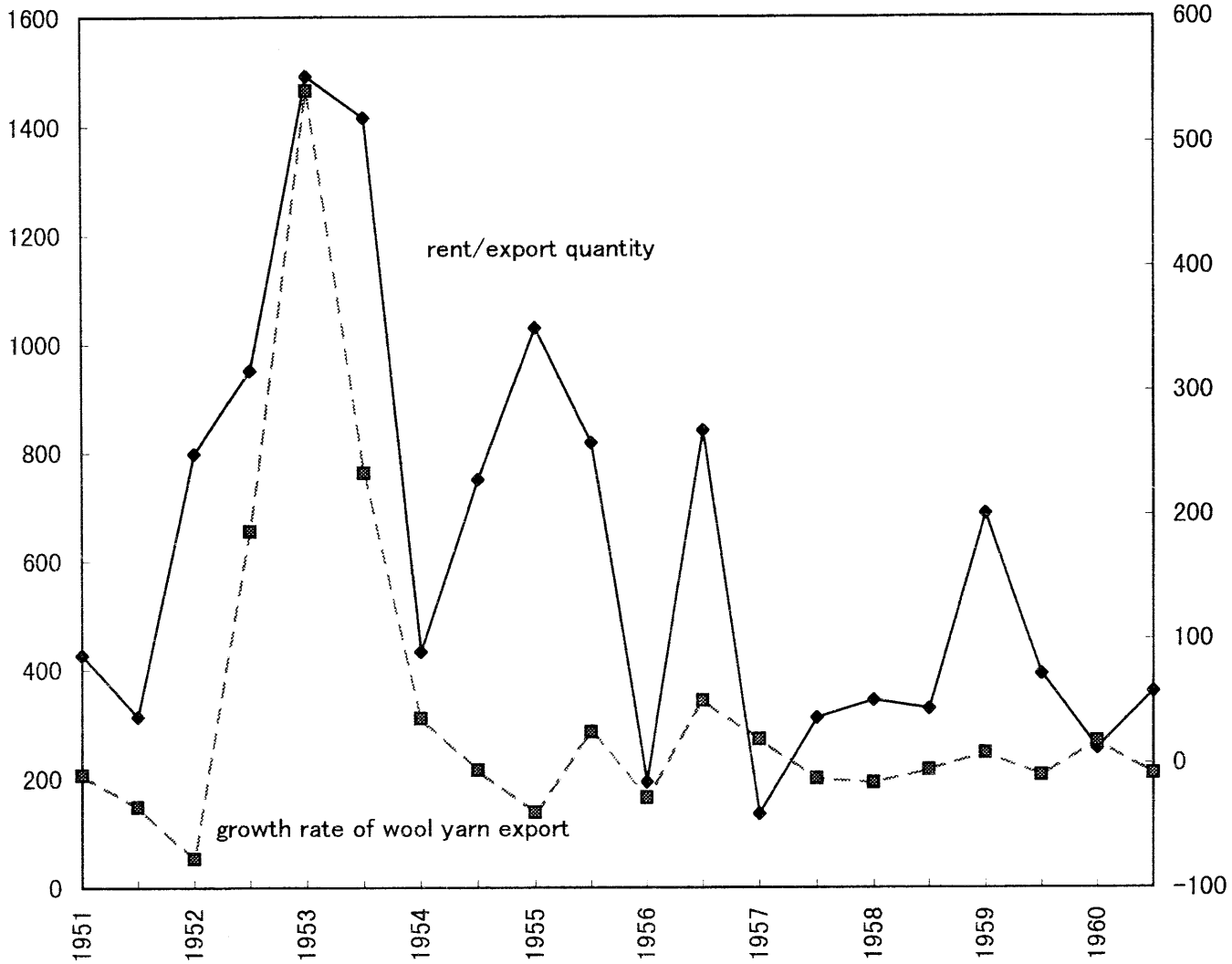

Figure 5 Rent (R2) and Investment