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産業政策の生産性効果：戦後日本における輸入数量制限撤廃のケース

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【要旨】
この論文では、第二次世界大戦後の日本における産業政策について、その効果を体系的に検討することを試みた。戦後の日本で実施された多くの産業政策の中で、ここでは、外貨割当制度を利用して行われていた事実上の輸入数量制限の撤廃に焦点を当てる。工業統計 4 桁分類の 227 産業に関して 1960-69 年のパネル・データを作成して分析した結果、輸入数量制限撤廃は実質産出，工場当たりの実質産出，そして雇用に有意でマイナスの影響を与えたことが明らかになった。一方で，輸入数量制限が撤廃された産業では，関税による保護が実質産出や雇用を維持する上で効果的に働いていたこともわかった。しかし，これらの結果は必ずしも産業政策の変化が効果的だったことを意味するわけではない。なぜなら，輸入数量制限撤廃も関税による保護も，生産性の成長には有意な影響を及ぼさなかったためである。この意味で、産業政策の効果はあくまで限定的なものだったと言える。

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Assessing the Effects of Japanese Industrial Policy Change

during the 1960s[*]

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Abstract

This paper provides a systematic analysis of the effects of the industrial policy change in the 1960s in Japan. We utilize a panel of 227 manufacturing industries between 1960 and 1969. We find that on the one hand, the removal of de facto import quotas had significantly negative effects on real output, real output per establishment, and employment. On the other hand, for those industries where import quotas were removed, tariff protection was effective in maintaining real output and employment. However, this does not necessarily mean the success of industrial policy change because neither tariff protection nor the removal of quotas contributed to productivity growth. In that sense, the industrial policy change had limited effects.

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1. Introduction

Quantifying the effects of industrial policies is one of the most important research issues in various fields of economics including industrial organization, international economics, development economics, and economic history (Noland and Pack, 2003).[1] Of the industrial policies applied in various periods and countries, one of the most controversial is Japanese industrial policy during the postwar period.[2] This controversy arises because the success of some Japanese industrial policies has been used to justify such targeting policies in other countries, including the United States.[3] Accordingly, several studies have attempted to quantify the effects of Japanese industrial policy (e.g., Beason and Weinstein, 1996; Kiyota and Okazaki, 2005, 2010).

Even though these previous studies are insightful, there is some room for improvement. For example, Kiyota and Okazaki (2005, 2010) utilized firm-level data, but the scope of these studies is not necessarily broad because Kiyota and Okazaki (2005) focused on large firms, while Kiyota and Okazaki (2010) focused only on cotton spinning firms. Beason and Weinstein (1996) utilized relatively aggregated industry-level data (13 manufacturing industries) from 1955 to 1990. This makes it difficult to control for heterogeneity within those aggregated industries, despite the fact that targeting was conducted at a detailed industry level. Furthermore, it should be noted that during the period that they examined, there was a substantial change in the

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[1] We use the term "industrial policies" in the broad sense of "policies that stimulate specific economic activities and promote structural change" (Rodrik, 2008). As we will discuss later, among the various types of industrial policies, this paper focuses on the removal of de facto import quotas through the foreign exchange allocation system in Japan.

[2] The Japanese government implemented industrial policies to control international trade, investment, technology imports, foreign exchange, etc. (Johnson, 1982; Komiya et al., 1988; Okimoto, 1989; Noland and Pack, 2003).

[3] "In fact, it is the success of Japanese targeting that is often used as the justification for targeting in the United States" (Beason and Weinstein, 1996, p. 286).

industrial policy regime (Ito and Kiyono, 1988; Asai, 2007). That is, before the early 1960s, with respect to most commodities, imports were regulated by the foreign exchange allocation system.

The primary purpose of the foreign exchange allocation system in Japan was to secure the balance of payments and to stabilize the currency value. However, this system was also used as a tool for industrial policy (Ministry of International Trade and Industry (MITI, 1991; Okazaki and Korenaga, 1999). The amount of foreign exchange available for the importation of each commodity was determined *ex ante* by the foreign exchange budget, and furthermore, each firm was required to apply to the MITI for foreign exchange allocation to import each commodity. The MITI utilized this system for various policy goals, including protection of domestic industries from international competition, giving the strategic industries priority access to high-quality imported equipment and inputs, promotion of exports, and regulation of domestic competition. In the context of this paper, it is particularly important that the allocation of the foreign exchange budget to each commodity effectively determined the maximum import quantity of the commodity, given its import price. In other words, the foreign exchange allocation system worked as a de facto import quota system and was used to protect domestic industries from international competition. [4] From the late 1950s, the International Monetary Fund (IMF), General Agreement on Tariffs and Trade (GATT), and foreign countries requested the Japanese government to abolish the regulation of foreign exchange, and as we will see below, in the 1960s, the foreign exchange allocation system was reduced in size and finally abolished. Given the role of the

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[4] In this paper, therefore, "import quota" means the de facto import quota through the foreign exchange allocation system.

foreign exchange allocation as a de facto import quota system, its abolition meant a substantial change in industrial policy. Furthermore, the MITI intended to improve the efficiency of industries by removing de facto import quotas from their products at the appropriate time.

This policy change in the 1960s, often called "trade liberalization," has been regarded as an epochal point in postwar Japanese economic history (Ito and Kiyono, 1988; Nakakita, 1993). However, to our knowledge, only a few studies have systematically analyzed the effects of this policy change. In this paper, we attempt such an analysis using detailed industry-level data.[5] Whereas the policy change occurred over a relatively short period, there were variations in the timing of the removal of the de facto import quotas across commodities, and hence across industries. We exploit these time-series and cross-sectional variations within and across industries in assessing the effects of the policy change. Furthermore, it is noteworthy that we can precisely identify the timing of the quota removal for each commodity, using original government documents. Moreover, this paper utilizes detailed industry-level data from the *Census of Manufactures*, matching this with information on trade protection (i.e., tariff rates and import quotas). This enables us to control for industry heterogeneity while covering the majority of manufacturing industries. Controlling for tariff rates is particularly important in assessing the effects of the policy change, because as we will see later, the government intended to mitigate the expected negative impacts of de facto quota removal on industries by raising tariff rates.

To examine the effects of quota removal, we follow the empirical framework of Head

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[5] The effects of trade protection (or trade liberalization) are important issues not only in the literature on international trade but also in the economic history literature. See, for example, Grant and Thille (2001), Irwin (2007), and Davis and Irwin (2008).

and Ries (1999). Their study tested whether or not the observed trend in output per plant and the number of plants are systematically related to tariff reductions in Canada, by analyzing 230 industries. They found that output increased, while the number of establishments decreased in the Canadian manufacturing sector after trade liberalization. Their results indicate that a smaller number of establishments were able to produce at a larger scale after trade liberalization, which they called the "rationalization effect." Our study also investigates whether such effects were evident during the period 1960–1969 in Japan.

In the Japanese economic history literature, it is widely believed that the abolition of the foreign exchange allocation system in the 1960s contributed significantly to the growth of manufacturing industries (Ito and Kiyono, 1988; Nakakita, 1993). We found positive effects of tariff protection and import quota removal on real value added and labor productivity in the OLS estimates. However, such positive effects disappeared once we controlled for the industry-specific time trend as well as the industry and year fixed effects. Our results imply that this belief may be attributable to a lack of control in terms of unobserved industry heterogeneity and macroeconomic shocks.

We also find that, on the one hand, the removal of de facto import quotas had significantly negative effects on real output, real output per establishment, and employment. On the other hand, for those industries that removed import quotas, tariff protection was effective in maintaining real output and employment. However, this does not necessarily mean the success of industrial policy change because neither tariff protection nor the removal of quotas contributed to productivity growth. In that sense, the industrial policy change had limited effects.

4

The rest of this paper is organized as follows. Section 2 reviews the removal of import quotas in Japan. Section 3 explains the empirical methodology and data. Section 4 presents the estimation results. Conclusions are presented in Section 5.

2. The Removal of Import Quotas in Postwar Japan: A Historical Review

This paper examines Japan's dramatic move from import quota protection to tariff protection in the postwar period. This section argues that the case of postwar Japan provides an excellent opportunity to explore the effects of quota removal.

After direct control of international trade by the government ceased in 1949 as a part of the "Dodge Plan," the Japanese government regulated trade indirectly through the allocation of foreign exchange.[6] That is, all the foreign exchange was held by either the government, the Bank of Japan (BOJ), or foreign exchange banks, and the government drew up a "foreign exchange budget" to allocate foreign exchange every six months. The foreign exchange budget was composed of the budget for service imports and that for commodity imports, which in turn was composed of the budget for "foreign exchange allocation system goods" (hereafter, FA goods) and that for "automatic approval system goods" (hereafter, AA goods).[7]

Whereas imports of AA goods were not checked within the total limit of the AA budget, an FA budget was allocated to each good (i.e., to coal, steel, etc.). Hence, for FA

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[6] The description of foreign exchange regulations below relies on Naoi and Okazaki (2013) and Okazaki and Korenaga (1999). See also Inuta (2000) pp. 38–53.

[7] The cotton-spinning industry is a typical industry that experienced a shift from FA goods to AA goods. Cotton yarn and raw cotton were classified as FA goods in the 1950s. "Cotton-spinning industry was not only protected from international competition through foreign exchange allocation for cotton yarn, but also domestic competition was also regulated by the MITI through foreign exchange allocations for raw cotton" (Kiyota and Okazaki, 2010, p. 590). From April 1961, raw cotton was classified as an AA good, implying that the importation of raw cotton was liberalized. As a result, government intervention in the cotton-spinning industry by means of foreign exchange allocations was discontinued.

goods, the upper limit of the import quantity was determined by the foreign exchange budget, given the import price. This implies that there was a de facto import quota for FA goods, and the MITI utilized this system for protecting domestic industries from international competition. For instance, in the early 1950s, the MITI decided to promote the automobile industry, which was in its infancy, and in accordance with this policy, the MITI reduced the foreign exchange budget for importing foreign automobiles to protect the Japanese automobile industry (Jiji Press, 1956; Long-Term Credit Bank of Japan, 1972).

Furthermore, to import FA goods, a firm had to apply to the MITI to receive an allotment of foreign exchange ex ante. In other words, the MITI had the authority to control each firm's imports of FA goods. In this sense, the classification of FA goods and AA goods was crucial. The MITI determined the classification for all import goods and made an announcement whenever it was revised (*Import Proclamation*, *Yunyu Kohyo*). De facto import quotas on each FA good by the foreign exchange allocation system generated rent by raising domestic prices. This rent was captured by the firms that were allocated foreign exchange for importing these goods, as well as the domestic producers of the goods, to the extent that the import quantity was restricted. Usually, foreign exchange for importing a certain good was allocated to the trading companies that would import it and to the firms that would use it as an input (Okazaki and Korenaga, 1999). Because the foreign exchange allocation system was utilized for these industrial policy goals including protection of domestic industries from international competition, the abolition of this system was an important change in Japanese industrial policy.

In the context of the international trade and finance regimes, this system was based on Article 14 of the Agreement of the International Monetary Fund (IMF) and Article 8 of the General Agreement on Tariffs and Trade (GATT), which allowed a member country to adopt "transitional arrangements" for imposing restrictions on foreign exchange and international trade. Japan had been allowed to utilize this arrangement because it participated in the IMF and GATT; however, as the Japanese economy recovered from the war and quickly grew, which helped to resolve the persistent deficit in its balance of payments in the late 1950s, the IMF and foreign countries began to request that Japan liberalize international trade (MITI, 1991, pp. 171–173; Customs and Tariff Bureau, Ministry of Finance (MOF), 1972, pp. 314–323).

Under these circumstances, the Japanese government approved the "Outline of the Plan for Trade and Foreign Exchange Liberalization" ("Boeki Kawase Jiyuka Keikaku Taiko"—hereafter, Outline), wherein it committed to raising the "liberalization rate" to 80 percent within three years. The liberalization rate is the percentage of imports of AA and "automatic foreign exchange allocation" goods (hereafter, AFA goods) to total imports, which was 41 percent in July 1960. AFA goods is a category that was introduced in 1960. When a firm applied to the MITI for a foreign exchange allocation to import goods in this category, foreign exchange was allocated automatically, and hence trade of AFA goods was regarded as "liberalized" (MITI, 1961, p. 51; Customs and Tariff Bureau, MOF, 1972, p. 327).

It is notable that in addition to the pressure being applied from overseas, the MITI also took account of the positive effects of the abolition of the foreign exchange allocation system. In the 1960 issue of *Tsusho Hakusho* (*White Paper on International*

7

Trade), the MITI wrote: "Although protecting domestic industries by restricting imports would contribute to promoting their growth transiently, it is not the right way to enhance the efficiency and competitiveness of the domestic industries to the international standard" (MITI, 1960, p. 99). In this sense, for the MITI, while quotas were imposed to protect an industry during its infancy, removing de facto import quotas from a commodity at the appropriate time was a type of industrial policy that was designed to improve the efficiency of the producing industry.

In response to continuing pressure from the IMF and the abovementioned policy of the MITI, the Japanese government swiftly changed the classification of certain goods from the FA category to the AA and AFA categories in 1961 and 1962, and consequently the foreign exchange liberalization rate increased to almost 90 percent by the end of 1962 (Figure 1). Given these changes, in April 1964, the foreign exchange budget system was abolished, and for the remaining FA commodities, the import quota system was introduced (Japan Tariff Association, 1964, pp. 139–140).

=== Figure 1 ===

While the removal of import quotas proceeded swiftly, it is notable that this process was different from what the literature in economics refers to as trade liberalization. That is, the Outline pointed out the need for revision of tariffs as well as the removal of import quotas. It stated: "As direct regulations on import quantities are mitigated, the role of tariffs for industrial policy becomes more important," and "Because many of the commodities to be liberalized need tariff protection, we will revise the Tariff Rate Law

from the standpoint of boosting liberalization."[8] Following the recovery of currency convertibility by European countries in 1958, the Japanese government and business community became interested in reviewing the tariff system. Under the de facto import quotas of the foreign exchange allocation system, the role of tariffs in the protected industries was limited; however, as this system was not expected to continue, they sought an alternative protective measure.

In April 1960, MOF consulted with the Tariff Rate Deliberation Council (Kanzeiritsu Shingikai) about changes to the tariff system to cope with the removal of import quotas, given the changes in Japan's industrial structure. The Council sent a report to the Minister of Finance in December 1960, and a new tariff system was introduced in June 1961 based on that report. This was the first major revision of the tariff system since the revision in 1951, when Japan was still under Allied occupation (Asai, 2007, pp. 42–46; Customs and Tariff Bureau, MOF, 1972, pp. 450–451, p. 469). The basic purpose of the 1961 revision was as follows:

1) protection of growing infant industries from the standpoint of the industrial structure policy;

2) protection of stagnating and declining industries to support changes in employment patterns; and

3) minimization of tariffs for other industries to promote expansion of trade, industry rationalization, and consumer benefits.

Of a total of 2,233 commodities listed in the tariff table, 251 had their tariff rates

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[8] *Outline of the Plan for Trade and Foreign Exchange Liberalization* (*Boeki Kawase Jiyuka Keikaku Taiko*, printed by the Economic Planning Agency (1960, pp. 17–18). Furthermore, in the 1960 issue of the *White Paper on International Trade*, the MITI noted: "With the abolition of quantitative import restrictions, the industrial policy role of tariffs, namely protecting developing industries important to the national economy, becomes particularly important" (MITI, 1961, pp. 64–65).

increased, 386 had their rates decreased and 1,596 commodities were unchanged (Customs and Tariff Bureau, MOF, 1972, pp. 468–469).[9] As stated above, the MITI intended to improve the efficiency of domestic industries by removing de facto import quotas from a commodity at the appropriate time. The revision of tariffs means that the MITI's goal was not fully achieved because of both political and economic reasons.

Figure 1 indicates two types of average tariff rates: the tariff revenue divided by total imports and the tariff revenue divided by the imports of commodities with tariffs. It can be seen that there was no substantial change in 1961 or 1962. In fact, the increase in 1959 is much clearer. Most of the increase in the average tariff rate in 1959 was because of the increase in the sugar tariff. In that year, the sugar tariff was increased from 14.0 yen/kg to 41.5 yen/kg, and the ratio of sugar tariff revenue to the import volume of commodities with tariffs was 4.4 and 7.7 in 1958 and 1959, respectively.[10] The 1961 tariff changes did not have a visible impact on the average tariff rate, but it is possible that tariff rates were altered at the detailed industry level to mitigate the impacts of quota removal, as expressed in the Outline in 1960. We will examine this issue in the next section.

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[9] According to the GATT agreement, in case a member country intended to increase the tariff rate on a certain commodity, it should inform all the member countries and negotiate with the interested countries, in advance. Hence, before the revision of tariffs in 1961, the Japanese government negotiated with the U.S. and West Germany to have their agreements (Customs and Tariff Bureau, MOF, 1972, pp.496-497).

[10] The data on sugar tariff revenue are taken from the Tax Bureau of the MOF (1961); the data on the import volume of commodities with tariffs are taken from the MOF's *Monthly Bulletin of Financial Statistics*, vol. 144, 1963, p. 80.

3. Methodology and Data

3.1. Methodology

The analysis used in this paper follows that of Head and Ries (1999). To examine the effects of quota removal, we include an import quota removal dummy that equals 1 when and after the import quota was removed and 0 otherwise.[11] The regression equation is as follows:

$$\ln Z_{it} = \alpha_i + \beta_t + \gamma[\ln(1 + \tau_{it})] + \lambda d_{it} + \eta[\ln(1 + \tau_{it}) \times d_{it}] + \alpha_i \times t + \epsilon_{it}, \qquad (1)$$

where i and t represent the industry and year, respectively; Z_{it} is the performance of industry; α_i and β_t are industry and year fixed effects, respectively; τ_{it} is the industry tariff rate; d_{it} is a quota removal dummy; $\alpha_i \times t$ is the industry-specific time trend; and ϵ_{it} is the error term. The interaction term $\ln(1 + \tau_{it}) \times d_{it}$ is included to control for the composite effect of tariffs and quotas.

Note that trade policy itself could be determined endogenously. For example, the declining industries may have high tariff levels. Guadalupe and Wulf (2010) addressed this concern by controlling for industry-specific trends. Therefore, the potential endogeneity biases can be absorbed by the industry secular trends $\alpha_i \times t$.[12]

For the performance of industry Z_{it}, following Head and Ries (1999), we utilize

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[11] We utilize a dummy variable to capture the effects of the removal of import quotas because of the limited availability of import quantity data.

[12] To address the issue of endogeneity, we also tested the system using GMM estimation. However, the Sargan test rejected the validity of the overidentifying restrictions for all outcome variables. The presence of second-order serial correlation in the first-differenced residuals was also rejected for some outcome variables. Furthermore, although we tested several specifications, the sign and significance levels of the coefficients were sensitive to the specifications. Because of the difficulty in finding appropriate instrument variables, as a second-best strategy, this paper addressed the issue of endogeneity, following Guadalupe and Wulf (2010). A more rigorous examination of endogeneity is left for future research.

output per establishment and the number of establishments. We also use output (shipment), value added, employment, and labor productivity.[13] The parameters of interest are γ, λ, and η, namely the coefficients of the two industrial policy variables (tariffs and the import quota dummy) and the composite of these two measures.

As we include industry fixed effects, the effects of industrial policy are estimated by using time-series variation. The year dummies capture influences common to all industries.

3.2. Data

Sample selection

We collected data on the number of establishments, the number of employees, shipments, and the value added of manufacturing industries at the four-digit level for the period from 1960 to 1969 from the industry volume of the *Census of Manufactures* (*Kogyo Tokei Hyo*). The *Census of Manufactures* over this period has data on plants with fewer than 10 employees as well as plants with 10 or more employees, but for many four-digit industries, the data on plants with fewer than 10 employees are censored because of the small number of such plants. Hence, we use the data on plants with 10 or more employees.

At the four-digit level, there are 558 manufacturing industries. Of these, 138 industries are excluded because of incomplete information on employment, shipments and value added from the census.[14] Next, using the commodity volumes of the *Census*

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[13] All variables are at the industry level. Although the use of firm- or establishment-level data may be more desirable, such data are not available for this period.

[14] The *Census of Manufactures* conceals the data for cases in which there were fewer than three establishments in an industry for reasons of confidentiality.

of Manufacturing, we identified the main product of each industry. We exclude from the sample 45 industries whose main products cannot be identified. In addition, those industries whose quota removal information (two industries), price data (131 industries), or tariff rates (five industries) are not available are excluded. We further exclude 10 industries whose growth rate of shipment, the number of establishments, per establishment shipmentt, value added, employment, or labor productivity is greater than 150 percent or smaller than −150 percent (in log values) to remove outliers (i.e., $|\ln(Z_t/Z_{t-1})| > 1.5|$). Consequently, there remain 227 industries in our sample. Our sample size is comparable to that of Head and Ries (1999) (230 industries).

Import quota removal

As stated in Section 2, those goods classified in the FA category were subject to de facto import quotas, while AA and AFA goods were not subject to such quantitative restrictions. Hence, here we examine the impact of removing quantitative import regulations by focusing on events in which a good moved from the FA category to the AA or AFA category.

Then, we explored into which category (AA/AFA/FA) the main product of each industry was classified at the end of each year from 1960 to 1969. The category information was taken from the following official sources. As stated in the previous section, the classification of each commodity in terms of the AA/AFA/FA categories was obtained from "Import Proclamation" (*Yunyu Kohyo*) by the MITI, which was made public in the *Official Bulletin of the MITI* (*Tsusansho Koho*). After April 1964, the list of commodities subject to the import quota system was also announced in the *Official Bulletin of the MITI*. We examined every issue of the *Official Bulletin of the MITI* from

13

1960 to 1969, as well as the Research Institute of International Trade and Industry (1965–69) to identify the category of each commodity at the end of each year.

Tariff rates

As explained in the previous section, the official publications from the MOF and the MITI stated that the tariff system was revised to mitigate the impact of removing quantitative restrictions in 1961 and 1962. To examine the effects of both tariff and quota removal, we collected data on the tariff rates on the main products of the 227 industries, as outlined above, from the 1961–1969 issues of *Customs Tariff Schedules of Japan* (Japan Tariff Association 1961; Japan Tariff Association 1962–1969). The tariff rates here are the MFN tariff rates in the customs tariff schedule. In this paper, we focus on $\ln(1 + \tau_{it})$ rather than tariff rate τ_{it} because $\ln(1 + \tau_{it})$ indicates the difference between domestic and foreign price levels.

Industry performance

Following Head and Ries (1999), we measure industry performance by real output, the number of establishments, and real output per establishment. Real output is defined as shipments divided by the wholesale price index from the BOJ. Shipments and the wholesale price index were obtained from the MITI (1960–1969) and the BOJ (1987), respectively. We linked the BOJ wholesale price index with a 1952 base to that with a 1960 base in 1960. Both the 1952 base index and the 1960 base index cover the price indices of 209 commodities. From the commodity volume of the MITI (1960–1969), we identified the commodities with the largest shipments in 1960 for each industry, and used the price index of that commodity as the deflator for the industry.

14

In addition to these industry performance variables, we utilize labor productivity as an additional performance variable.[15] Labor productivity is defined as real value added divided by the number of workers. Real value added, in turn, is defined as nominal value added divided by the sectoral value-added deflator. Nominal value added and value-added deflators are obtained from the MITI (1960–1969) and the Cabinet Office (2001), respectively.

3.3. Descriptive analysis

Figure 2 shows the number of establishments, shipments (real output), and real output per establishment from 1960 to 1969.[16] While the volume of real output grew steadily, the number of establishments was almost constant throughout the period. As a result, the real output per establishment increased. One notable finding is that there was no rationalization effect. Head and Ries (1999) found that a smaller number of establishments produced on a larger scale after trade liberalization, which they called the rationalization effect. Such an effect was not confirmed during the period 1960–1969 in Japan.

=== Figure 2 ===

Panel A in Table 1 shows the number of industries in our sample that removed import quotas. It can be seen that eight out of 227 industries removed import quotas before 1961. Between 1961 and 1962, 163 industries removed import quotas. Between 1963 and 1969, an additional 31 industries removed quotas. Before 1970, therefore, 202 out

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[15] Information on the capital stock is not available. Therefore, it is impossible for us to estimate total factor productivity.

[16] In Table A1, we present the average of the industry performance measures by year. Table A2 shows the correlation matrix of the performance and policy variables.

of 227 industries removed quotas. The remaining 25 industries did not remove quotas throughout the period. In summary, the years in which industries removed import quotas were concentrated in the early 1960s, when the Japanese government promoted quota removal in accordance with the Outline announced in 1960.

=== Table 1, Panel A ===

Panel B in Table 1 shows the relationship between the import quota removal and changes in tariff rates. The average change in tariff rates when the quota was removed is 0.06 percent, which is slightly higher than for other years (-0.22 percent). To test the equality of these figures, we conduct t-tests with unequal variances. The null hypothesis that these means are equal is rejected at the five percent level ($t = -2.38$ and p-value = 0.018). The results seem to suggest that the Japanese government maintained or raised tariff rates when the import quotas were removed.

=== Table 1, Panel B ===

Table 2 shows the average of industry performance before and after quota removal.[17] It can be seen that the averages of real output and the number of establishments increased after the removal of the import quotas, whereas average output per establishment remained almost constant. Similarly, real value added, employment, and labor productivity all increased. On the other hand, tariff rates declined. In spite of the increases in these variables after the quota removal, the growth rate did not show any clear pattern. Nonetheless, the growth rate of industry performance continued to be

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[17] Note that the total number of industries that removed import quotas is 194 (not 202) because six industries removed quotas before 1961.

positive before and after the removal of the import quotas.

=== Table 2 ===

One may argue that these results show the positive effects of quota removal. However, Table 2 presents a simple comparison before and after quota removal, and thus does not control for any industry- and year-specific effects. Noting that the period of quota removal coincided with the age of high economic growth in Japan, these results may simply reflect factors other than the removal of import quotas. The next section investigates the effects of quota removal in detail.

4. Results

4.1. Preliminary analysis

We begin with the simple ordinary least squares (OLS) results. Table 3 presents the OLS estimates of equation (1), excluding industry-specific trends and year and industry fixed effects. The results indicate that tariff rates have significantly positive effects on all industry performance measures. The removal of import quotas also has positive effects on real value added and labor productivity. The interaction term between tariff rate and quota removal dummy is significantly positive for employment, whereas it is significantly negative for labor productivity. These results suggest that for industries that removed import quotas, protection by tariff was effective in maintaining the employment level. However, real output did not increase significantly. As a result, the interaction term indicates significantly negative coefficients for labor productivity.

=== Table 3 ===

17

The result is generally consistent with the findings of the previous studies that argued that "trade liberalization" or removal of de facto import quotas in the 1960s in Japan had significantly positive effects on manufacturing growth (Ito and Kiyono, 1988; Nakakita, 1993). Note, however, that the analysis of the previous studies was mainly based on the descriptive analysis of the data. The analysis did not control for such factors as unobserved industry and year heterogeneity.[18] We also examined how sensitive the results are to the additional control variables and found that once we introduced year fixed effects, the positive effects of the removal of import quotas became negative. Besides, industry performance can be heterogeneous across industries. The next section controls for such heterogeneity.

4.2. Baseline results

Table 4 contains the estimation results of equation (1). There are four notable findings. First, the quota removal dummy indicates statistically negative coefficients for real output, real output per establishment, and employment. It also indicates a negative coefficient for real value added, although it is insignificant. The results suggest that the removal of import quotas increased the competition from imports, which results in the declines in real output and employment. Unlike the case of Canadian manufacturing (Head and Ries, 1999), however, the number of establishments did not decline. As a result, real output per establishment remained unchanged after the quota removal. In other words, the rationalization effect was not found in our sample.

=== Table 4 ===

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[18] We also examined how sensitive the results are to the additional control variables. The results are reported in Table A3.

Second, none of the industry performance measures is systematically related to the tariff rates. This result implies that on average, the protection by tariff was not necessarily effective. Third, however, the coefficient of the interaction term between tariff and quota removal dummy is significantly positive for real output, real output per establishment, real value added, and employment. This result implies that for industries that removed import quotas, protection by tariff was effective in maintaining real output and employment levels. This result may imply that the protection by the MITI shifted from import quotas to tariffs strategically in order to maintain the output and employment of the industries.

Fourth, however, this result does not necessarily mean the success of the Japanese industrial policy change because neither tariff protection nor the removal of quotas had significant effects on labor productivity. Industrial policy change did not have any effects on industry efficiency. In that sense, these results together suggest that the effects of industrial policy were limited.

We found positive effects of tariff protection and import quota removal on real value added and labor productivity in the OLS estimates in Table 3. Such positive effects disappeared once we controlled for the industry-specific time trend as well as the industry and year fixed effects. In the Japanese economic history literature, it is widely believed that the industrial policy change in the 1960s contributed significantly to the growth of manufacturing industries. However, our results imply that such belief may be attributable to a lack of control in terms of unobserved industry heterogeneity and macroeconomic shocks. Noting that this result in the literature is mainly based on descriptive analyses of the data, our results suggest that the effects of Japanese

19

industrial policy should be reexamined using a standard econometric framework. This finding in the literature may be the result of an inappropriate analysis.[19]

4.3. Dynamic effects

A related question is whether the removal of the import quotas affects the growth rate, because the effects of policy change are sometimes dynamic rather than static.[20] To answer this question, we run the following regression:

$$\Delta \ln Z_{it} = \alpha_i + \beta_t + \gamma[\ln(1 + \tau_{it})] + \lambda d_{it} + \eta[\ln(1 + \tau_{it}) \times d_{it}] + \epsilon_{it,t+1}, \tag{2}$$

where Δ indicates first differences between years t and $t+1$. The difference between equation (2) and the baseline regression (i.e., equation (1)) is that the left-hand-side variable is the growth rate of industry performance in equation (2).[21] Table 5 presents the estimation results of equation (2). Table 5 indicates that none of the policy variables has significant coefficients. These results suggest that the growth of industry performance was not accelerated by these policy measures.

=== Table 5 ===

5. Concluding Remarks

This paper has attempted to provide a systematic analysis of the effects of the industrial policy change in Japan in the 1960s, using a set of detailed industry-level data. Most of

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[19] As robustness checks, we examine the dyssynchronous effects of the quota removal, which are discussed in Appendix 1 of the working paper version of our paper (Kiyota and Okazaki, 2015). We also examined the difference in the effect of quota removal between earlier and later periods, which is discussed in Appendix 2 of Kiyota and Okazaki (2015).

[20] See, for example, Kiyota (2012) for a survey.

[21] In equation (4), α_i now captures the preexisting trends in productivity of the industries because the left-hand-side variable is the growth rate. Industry-specific time trends are excluded, accordingly.

the industries were protected from international competition by de facto import quotas by the foreign exchange allocation system until the late 1950s, when the pressure intensified from overseas to liberalize trade. Given this pressure, by removing import quotas, the MITI intended to improve the efficiency of those industries that were expected to progress beyond infancy. In this sense, removing import quotas was a form of industrial policy.

To examine the effects of industrial policy change, we utilized a panel of 227 Japanese manufacturing industries between 1960 and 1969. We find that on the one hand, the removal of quotas had significantly negative effects on real output, real output per establishment, and employment. On the other hand, for those industries that removed import quotas, tariff protection was effective in maintaining real output and employment. However, this does not necessarily mean the success of industrial policy change because neither tariff protection nor the removal of quotas contributed to the productivity growth. Furthermore, the rationalization effect was not found in our sample.

In the Japanese economic history literature, it is widely believed that the industrial policy change in the 1960s contributed significantly to the growth of manufacturing industries. However, our results imply that this was not necessarily true in two respects. First, industrial policy change in the 1960s does not necessarily mean trade liberalization because protection was maintained, shifting from import quotas to tariffs. Second, neither tariffs nor the removal of import quotas affected the productivity or the growth of other industry performance measures. In that sense, the industrial policy change had limited effects.

Caveats of this paper worth mentioning are as follows. First, while this paper focused on labor productivity, it is more desirable to utilize total factor productivity (TFP). This is because TFP takes factor inputs other than labor into account. As Kiyota and Okazaki (2005, 2010) found, Japanese industrial policy generally had positive effects on labor productivity but insignificant effects on TFP. The effects of quota removal on TFP could differ from those on labor productivity.

Second, there are some limitations stemming from data availability. This paper utilized industry-level data because of the limited availability of firm- or establishment-level data in the 1960s. However, recent studies on industrial policy change and productivity utilize firm- or establishment-level data. The use of such micro-level data enables us to control for unobserved firm or establishment heterogeneity. The effects of quota removal may be heterogeneous between large and small firms and/or between productive and less productive firms. Furthermore, we used data on plants with 10 or more employees. It is possible that industrial policy change had positive or negative effects with respect to small plants. Concerning the industrial policy variable, we used a dichotomous variable indicating whether a certain commodity was classified as an FA good or not. However, it is possible that before the classification of a commodity was changed to AFA/AA, the allocation of foreign exchange to the commodity was increased sufficiently. We did not take account of this possibility in this paper.

Third, our analysis did not consider the effects of the decline in the price of intermediate inputs or interindustry effects. Recent studies such as those of Amiti and Konings (2007), Fernandes (2007), and Topalova and Khandelwal (2001) found

significant positive effects from the decline in input tariffs on firm productivity. This implies that the effects of industrial policy could appear through interindustry linkages. However, to control for such effects, we need detailed data on intermediate inputs, which are currently unavailable. To address these issues, it is essential that the quality and coverage of the historical data be improved and expanded.

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Appendix 1. Dyssynchronous effects

One concern regarding the baseline analysis may be that producers knew the schedule for quota removal in advance. In other words, producers may have started the adjustment in year t given the information on tariff rates and the quota removal schedule in year $t+1$. As described in Section 2, the government announced the schedule for quota removal in 1960, and therefore this concern is relevant in our context. If this is true, the regression equation (1) could not capture the effects of quota removal because it assumes that the effects appear simultaneously (in year t).

To address this concern, this paper uses a forward lag for tariff rates and the quota removal dummy:

$$\ln Z_{it} = \alpha_i + \beta_t + \gamma[\ln(1 + \tau_{it+1})] + \lambda d_{it+1} + \eta[\ln(1 + \tau_{it+1}) \times d_{it+1}]$$

$$+\alpha_i \times t + \epsilon_{it}. \tag{A1}$$

Equation (A1) could also address the issue of reverse causality. The government imposed higher tariffs in year $t+1$ if the industry was small in year t. In this case, $\gamma > 0$.

Table A4 shows the estimation results of equation (A1). The results are similar to those of the baseline model. The quota removal has significantly negative effects on real output per establishment and employment. The interaction term between tariff rate and quota removal dummy indicates a significantly positive coefficient for real output per establishment and real value added. The effects on labor productivity were insignificant. These results together imply that producers knew the schedule for quota removal and thus had already started the adjustment in year $t+1$ although the efficiency did not

29

improve.

=== Table A4 ===

Another concern may be that the effects of quota removal disappeared immediately. To address this concern, this paper uses a lag for the tariff rates and the quota removal dummy:

$$\ln Z_{it} = \alpha_i + \beta_t + \gamma[\ln(1 + \tau_{it-1})] + \lambda d_{it-1} + \eta[\ln(1 + \tau_{it-1}) \times d_{it-1}]$$

$$+\alpha_i \times t + \epsilon_{it}. \tag{A2}$$

Note that the independent variables are lagged by one year; data for the independent variables used in this analysis are from 1960 to 1968. The period 1968–1969, when average tariff rates declined, is not included in this analysis.

Table A5 shows the estimation results of equation (A2). The results are qualitatively the same as those of the baseline model. That is, the removal of import quotas had significantly negative effects on real output and real output per establishment. The protection by tariff did not have significant effects on any industry performance measures. The interaction term between tariff and quota removal dummy shows significantly positive coefficients for real output and real output per establishment. Neither tariff protection nor quota removal affected the labor productivity. Together with the baseline results, the effects of quota removal and tariff protection did not disappear immediately for real output and real output per establishment, although labor productivity was not affected by these policy measures.

=== Table A5 ===

Appendix 2. Differences between the early and late 1960s

One may argue that the effects of quota removal are different between the early and late 1960s. As shown in Table 2, the year in which industries removed import quotas varies across industries: some industries removed import quotas before 1960, whereas others did so in 1969. Industries whose performance was inferior to other industries might have delayed the removal of import quotas. Therefore, the negative effects of quota removal might have been limited in the late 1960s. To address this issue, we estimate the following equation:

$$\ln Z_{it} = \alpha_i + \beta_t + \gamma[\ln(1 + \tau_{it})] + \lambda^e d_{it}^e + \lambda^l d_{it}^l + \eta[\ln(1 + \tau_{it}) \times d_{it}]$$

$$+\alpha_i \times t + \epsilon_{it}. \tag{A3}$$

where d_{it}^e is a dummy variable that equals 1 if import quotas were removed before 1966 and 0 otherwise, and d_{it}^l is a dummy variable that equals 1 if import quotas were removed after 1966 and 0 otherwise ($d_{it} = d_{it}^e + d_{it}^l$).

Table A6 presents the estimation results. The coefficient of quota removal dummy is significantly negative in both the early and late 1960s for real output and employment. It is also negative in both periods for real output per establishment, although it is insignificant in the late 1960s. The effects of quota removal and tariff protection on labor productivity were insignificant in both the early and late 1960s. The effects of the removal of import quotas were, therefore, qualitatively the same between industries that removed quotas in the early 1960s and in the later 1960s.

=== Table A6 ===

Figure 1. Average Tariff Rates and Foreign Exchange Liberalization Rate
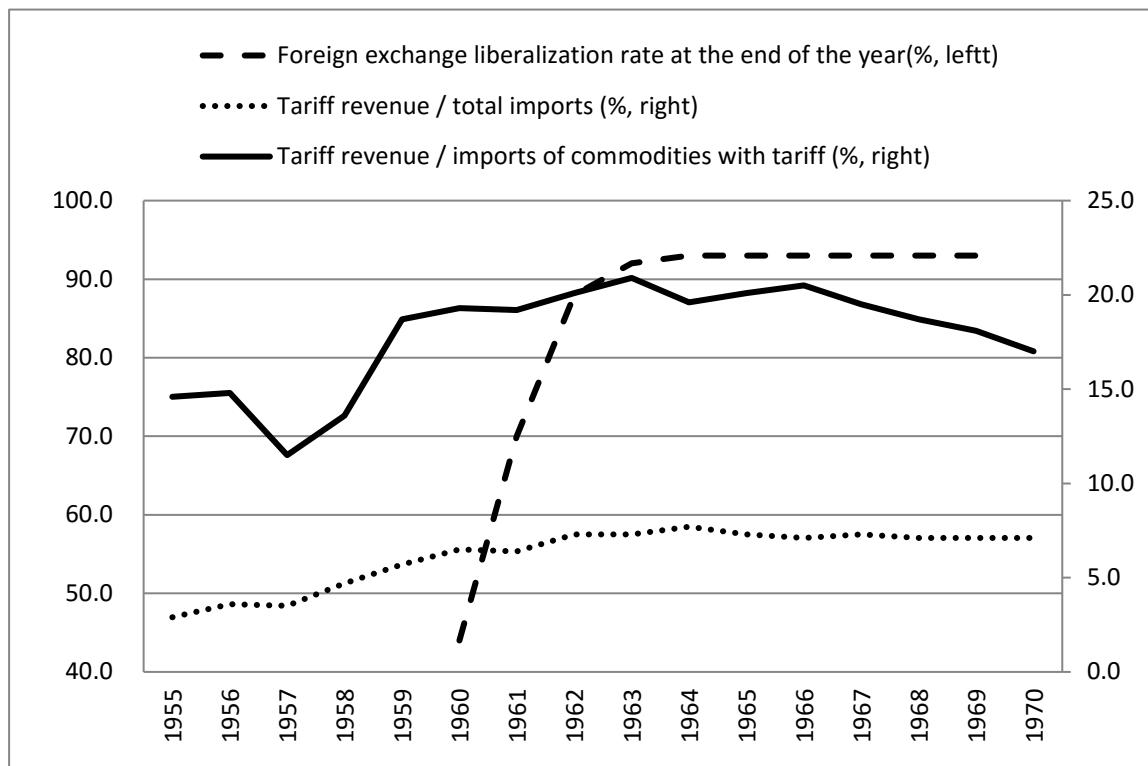
Note: Foreign exchange libararization rate refers to the ratio of imports of AA and AFA goods to total imports (Customs and Tariff Bureau, Ministry of Finance 1972, p.324). The information on liberalization rate is available from 1960 to 1969.

Sources: For tariff revenue and imports, Ministry of Finance (1972) *Montyly Bulletin of Financial Statistics* , p.246. For liberalization ratio, MITI(1970), p.269.

Figure 2. Scale of Japanese Manufacturing, 1960-1969
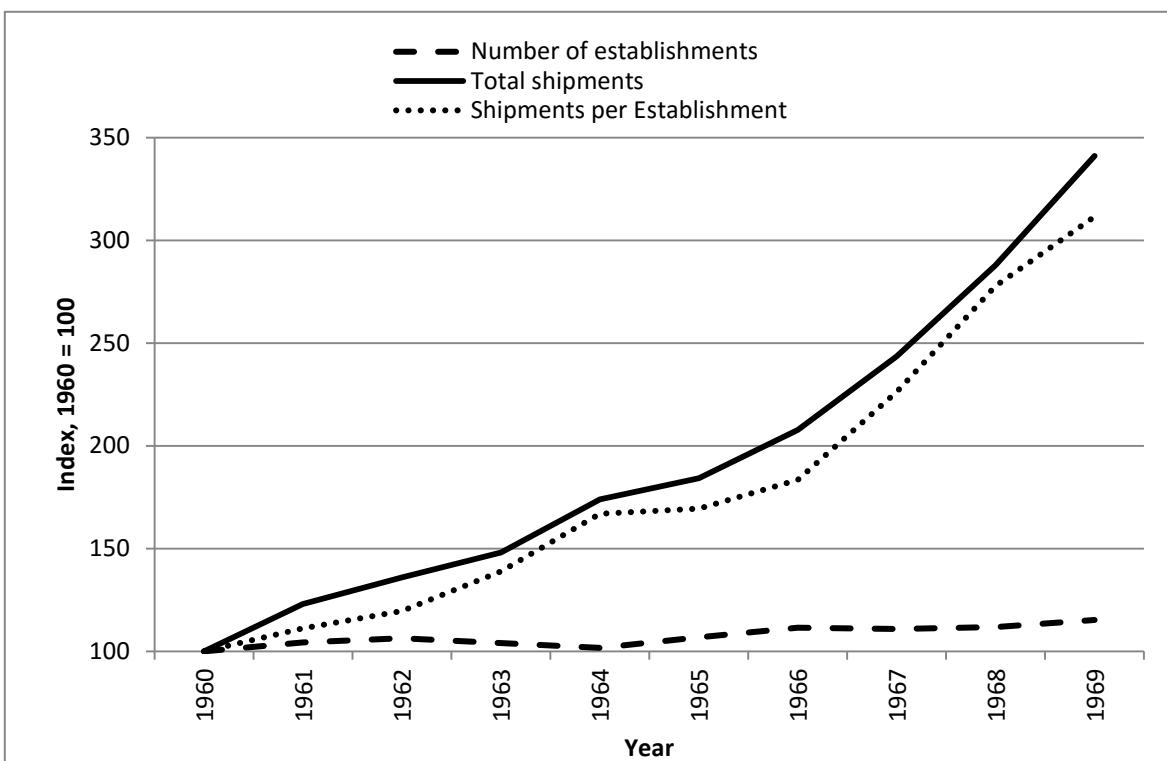
Source: MITI (1960-69).

Table 1. Import Quota and Tariff Rates
Panel A. Number of industries that removed import quota

Year when import quota was removed	Industries that removed import quota	Cumulative number of industries that removed import quota	Total number of industries	Share
before 1961	8	8	227	0.04
1961	25	33	227	0.15
1962	138	171	227	0.75
1963	8	179	227	0.79
1964	2	181	227	0.80
1965	15	196	227	0.86
1966	0	196	227	0.86
1967	1	197	227	0.87
1968	0	197	227	0.87
1969	5	202	227	0.89

Panel B. Import quota removal and changes in tariff rates

Quota removal between years t-1 and t	Changes in tariff rates between years t-1 and t		
	N	Mean	Standard Deviation
No	1849	-0.0022	0.000
Yes	194	0.0006	0.001

Note: The year when import quota is removed defined as the year when the protection by a de facto import quota through the foreign exchange allocation system was removed. Tariff rates are ln(1+tariff rate).

Source: MITI (1960-1969).

Table 2. Summary Statistics: Before and After the Removal of Import Quota

	Level			Growth rate	
	Before	After		Before	After
Real output	81,142	112,968		0.122	0.106
[Q]	(117,385)	(197,785)		(0.182)	(0.198)
Number of establishments	350	526		0.007	0.001
[N]	(557)	(1,106)		(0.133)	(0.130)
Output per establishment	1,056	1,055		0.115	0.105
[q = Q/N]	(2,434)	(4,178)		(0.186)	(0.181)
Real value-added	23,949	39,663		0.134	0.122
[VA]	(33,027)	(68,737)		(0.242)	(0.225)
Employment	21,727	29,169		0.026	0.006
[L]	(25,871)	(41,512)		(0.153)	(0.153)
Labor productivity	1.160	1.389		0.108	0.116
[lp = VA/L]	(1.067)	(1.071)		(0.189)	(0.171)
Tariff rates	0.168	0.147		0.001	-0.003
	(0.089)	(0.074)		(0.029)	(0.016)

Note: Average figures are reported. Growth rates are annual average growth rates. Figures in parentheses are standard deviations. Tariff rates are ln(1+tariff). The growth of tariff rates indicates the changes in ln(1+tariff rate) between years t-2 and t.

Source: See Table 1.

Table 3. OLS Results

	(1)	(2)	(3)	(4)	(5)	(6)
	lnQ	lnN	lnq	lnVA	lnL	lnlp
Quota removal dummy	-0.000	0.093	-0.094	0.281**	-0.079	0.360***
(year t)	(0.152)	(0.145)	(0.154)	(0.143)	(0.125)	(0.066)
Tariff rates	2.672***	1.490**	1.182*	2.569***	1.818***	0.751**
(year t)	(0.576)	(0.586)	(0.688)	(0.522)	(0.446)	(0.298)
Tariff rates * Quota	1.180	0.994	0.186	0.526	1.342**	-0.817**
removal dummy (year t)	(0.784)	(0.819)	(0.883)	(0.739)	(0.659)	(0.374)
Industry fixed effect	No	No	No	No	No	No
Year fixed effect	No	No	No	No	No	No
Industry-specific time trend	No	No	No	No	No	No
Observations	2,270	2,270	2,270	2,270	2,270	2,270
R-squared	0.032	0.017	0.005	0.030	0.026	0.027
Number of industries	227	227	227	227	227	227

Note: ***, **, and * indicate statistical significant at 1%, 5%, and 10% levels, respectively.
Robust standard errors in parentheses. Constant term is not reported to save spaces.
Source: See Table 1.

Table 4. Baseline Results

	(1)	(2)	(3)	(4)	(5)	(6)
	lnQ	lnN	lnq	lnVA	lnL	lnlp
Quota removal dummy	-0.174*	0.028	-0.202***	-0.143	-0.147**	0.004
(year t)	(0.092)	(0.062)	(0.067)	(0.091)	(0.064)	(0.051)
Tariff rates	-0.354	0.236	-0.590	-0.054	-0.225	0.170
(year t)	(0.443)	(0.324)	(0.396)	(0.484)	(0.319)	(0.296)
Tariff rates * Quota	0.876*	-0.221	1.097***	0.833	0.615*	0.218
removal dummy (year t)	(0.515)	(0.332)	(0.345)	(0.507)	(0.349)	(0.265)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,270	2,270	2,270	2,270	2,270	2,270
R-squared (within)	0.717	0.323	0.751	0.752	0.369	0.848
Number of industries	227	227	227	227	227	227

Note: See Table 3.
Source: See Table 1.

Table 5. Effects of the Import Quota Removal on Growth

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth rate (between t-1 and t)					
	lnQ	lnN	lnq	lnVA	lnL	lnlp
Quota removal dummy	0.038	-0.004	0.042	0.070*	0.027	0.043
(year t-1)	(0.031)	(0.018)	(0.028)	(0.036)	(0.024)	(0.027)
Tariff rates	-0.016	-0.057	0.040	0.081	-0.108	0.189
(year t-1)	(0.166)	(0.105)	(0.168)	(0.213)	(0.122)	(0.169)
Tariff rates * Quota	-0.059	0.083	-0.142	-0.175	-0.012	-0.163
removal dummy (year t-1)	(0.149)	(0.088)	(0.140)	(0.167)	(0.103)	(0.130)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,043	2,043	2,043	2,043	2,043	2,043
R-squared (within)	0.029	0.051	0.063	0.042	0.028	0.040
Number of industries	227	227	227	227	227	227

Note: See Table 3.

Source: See Table 1.

Table A1. Summary Statistics, by Year

year	Real output Q	Number of establishments N	Output per establishment q	Real value-added VA	Employment L	Labor productivity lp	Tariff rates tariff
1960	53,649	448	595	16,434	23,484	0.758	0.153
1961	65,498	465	659	20,399	25,307	0.832	0.155
1962	72,392	472	711	22,494	25,918	0.891	0.156
1963	79,035	457	814	26,165	26,609	1.025	0.158
1964	92,347	445	978	30,384	27,175	1.160	0.158
1965	97,926	468	995	31,427	27,090	1.216	0.159
1966	110,529	488	1,080	37,364	27,687	1.418	0.158
1967	129,121	484	1,328	45,644	27,796	1.717	0.158
1968	151,345	483	1,593	53,149	28,282	1.908	0.145
1969	178,294	496	1,804	64,022	29,067	2.252	0.136

Note: Average figures are reported.
Source: MITI (1960-1969).

Table A2. Correlation Matrix

	Real output Q	Number of establishments N	Output per establishment q	Real value-added VA	Employment L	Labor productivity lp	Tariff rate tariff	Quota removal dummy quota	Tariff*quota tariff_quota
Q	1								
N	0.313	1							
q	0.595	-0.109	1						
VA	0.915	0.320	0.471	1					
L	0.690	0.777	0.113	0.690	1				
lp	0.406	-0.166	0.429	0.458	-0.015	1			
tariff	0.113	-0.003	0.089	0.069	0.042	0.010	1		
quota	0.083	0.084	0.000	0.121	0.092	0.099	-0.122	1	
tariff_quota	0.145	0.052	0.053	0.146	0.104	0.052	0.421	0.7457	1

Source: MITI (1960-1969).

Table A3. Alternative Specifications

	(1)	(2)	(3)	(4)	(5)	(6)
	lnQ	lnN	lnq	lnVA	lnL	lnlp
Quota removal dummy	0.447***	-0.014	0.461***	0.607***	-0.080	0.687***
(year t)	(0.093)	(0.060)	(0.066)	(0.095)	(0.075)	(0.070)
Tariff rates	-2.541**	0.102	-2.643***	-2.310**	-0.331	-1.979*
(year t)	(1.016)	(0.345)	(0.985)	(1.156)	(0.448)	(1.006)
Tariff rates * Quota	0.380	0.130	0.250	-0.002	0.819*	-0.821*
removal dummy (year t)	(0.560)	(0.333)	(0.429)	(0.585)	(0.447)	(0.457)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	No	No	No	No	No	No
Industry-specific time trend	No	No	No	No	No	No
Observations	2,270	2,270	2,270	2,270	2,270	2,270
R-squared (within)	0.240	0.001	0.286	0.285	0.016	0.359
Number of industries	227	227	227	227	227	227
	(1)	(2)	(3)	(4)	(5)	(6)
	lnQ	lnN	lnq	lnVA	lnL	lnlp
Quota removal dummy	-0.216***	-0.033	-0.182***	-0.112	-0.195***	0.083
(year t)	(0.081)	(0.062)	(0.054)	(0.084)	(0.073)	(0.054)
Tariff rates	-0.756*	0.032	-0.787**	-0.373	-0.421	0.048
(year t)	(0.433)	(0.359)	(0.334)	(0.477)	(0.444)	(0.263)
Tariff rates * Quota	1.058**	0.131	0.927***	0.733	0.857**	-0.124
removal dummy (year t)	(0.475)	(0.328)	(0.283)	(0.473)	(0.430)	(0.250)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trend	No	No	No	No	No	No
Observations	2,270	2,270	2,270	2,270	2,270	2,270
R-squared (within)	0.582	0.010	0.696	0.639	0.038	0.798
Number of industries	227	227	227	227	227	227

Note: See Table 3.

Source: See Table 1.

Table A4. Dyschronous Effects of the Quota Removal: Forward Lag

	(1) lnQ	(2) lnN	(3) lnq	(4) lnVA	(5) lnL	(6) lnlp
Quota removal dummy	-0.101	0.027	-0.128**	-0.090	-0.089*	-0.001
(year t+1)	(0.080)	(0.052)	(0.062)	(0.071)	(0.051)	(0.046)
Tariff rates	-0.681	0.283	-0.964	-0.185	-0.229	0.044
(year t+1)	(0.630)	(0.486)	(0.632)	(0.633)	(0.425)	(0.391)
Tariff rates * Quota	0.568	-0.091	0.658*	0.733*	0.430	0.303
removal dummy (year t+1)	(0.463)	(0.277)	(0.355)	(0.429)	(0.302)	(0.257)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,043	2,043	2,043	2,043	2,043	2,043
R-squared (within)	0.697	0.325	0.716	0.731	0.373	0.821
Number of industries	227	227	227	227	227	227

Note: See Table 3.

Source: See Table 1.

Table A5. Dyschronous Effects of the Quota Removal: Lag

	(1) lnQ	(2) lnN	(3) lnq	(4) lnVA	(5) lnL	(6) lnlp
Quota removal dummy	-0.149*	0.021	-0.170***	-0.103	-0.124*	0.022
(year t-1)	(0.083)	(0.068)	(0.051)	(0.084)	(0.067)	(0.040)
Tariff rates	-0.011	0.242	-0.253	0.235	-0.179	0.414
(year t-1)	(0.385)	(0.272)	(0.317)	(0.442)	(0.289)	(0.294)
Tariff rates * Quota	0.895*	-0.128	1.023***	0.801	0.620	0.181
removal dummy (year t-1)	(0.481)	(0.384)	(0.262)	(0.486)	(0.384)	(0.198)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,043	2,043	2,043	2,043	2,043	2,043
R-squared (within)	0.699	0.309	0.749	0.733	0.343	0.844
Number of industries	227	227	227	227	227	227

Note: See Table 3.

Source: See Table 1.

Table A6. Differences between Earlier and Later Periods

	(1) lnQ	(2) lnN	(3) lnq	(4) lnVA	(5) lnL	(6) lnlp
Quota removal dummy	-0.174*	0.029	-0.203***	-0.144	-0.145**	0.001
(year t, before 1966)	(0.092)	(0.062)	(0.067)	(0.091)	(0.064)	(0.051)
Quota removal dummy	-0.199*	-0.056	-0.143	-0.074	-0.210***	0.137
(year t, after 1966)	(0.114)	(0.102)	(0.120)	(0.120)	(0.078)	(0.097)
Tariff rates	-0.361	0.215	-0.575	-0.037	-0.241	0.204
(year t)	(0.448)	(0.324)	(0.399)	(0.487)	(0.322)	(0.292)
Tariff rates * Quota	0.883*	-0.199	1.082***	0.815	0.631*	0.184
removal dummy (t)	(0.519)	(0.333)	(0.348)	(0.511)	(0.351)	(0.263)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,270	2,270	2,270	2,270	2,270	2,270
R-squared (within)	0.717	0.324	0.751	0.752	0.369	0.848
Number of industries	227	227	227	227	227	227

Note: See Table 3.

Source: See Table 1.