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Impact of the Memory of *Kurofune* (Black Ships) on the
Course of Industrialization in Early Meiji Japan

ODANAKA, Naoki

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TOHOKU ECONOMICS RESEARCH GROUP

GRADUATE SCHOOL OF ECONOMICS AND

MANAGEMENT TOHOKU UNIVERSITY

27-1 KAWAUCHI, AOBA-KU, SENDAI,

980-8576 JAPAN

Impact of the Memory of *Kurofune* (Black Ships) on the Course of Industrialization in Early Meiji Japan

Naoki Odanaka (Tohoku University, Sendai, Japan)

SUMMERY

This paper analyzes the impact and influence of the memory of *kurofune* (black ships), iron-armored battleships of the United States Navy led by Commodore Matthew Perry (1794-1858) that came to Japan in 1853, exerted over the course of industrialization in early Meiji Japan, which is the period from the Meiji Restoration (1868) to the Sino-Japanese war (1894-5). Using the comparative advantage theory formalized by David Ricardo (1772-1823) as an analytical tool, we consider the arguments of major contemporary Japanese policymakers as the object of analysis. We have three conclusions. First, the economic policy adopted by early Meiji policymakers generally followed the comparative advantage theory. Second, their goal was not the monoculturization of the comparative advantage goods, but the heavy industrialization necessary for avoiding the colonization: export of comparative advantage goods was a means to collect money for it. Third, they regarded the development of transportation-related industries as important because it would hasten the “movement” of men and goods, which would lead to the increased wealth and which was symbolized by the *kurofune* in the collective memory.

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1. INTRODUCTION

This paper analyzes the impact and influence of the memory of *kurofune* (black ships), iron-armored battleships of the United States Navy led by Commodore Matthew Perry (1794-1858) that came to Japan in 1853, exerted over the course of industrialization in early Meiji Japan, which is the period from the Meiji Restoration (1868) to the Sino-Japanese war (1894-5), using the comparative advantage theory formalized by David Ricardo (1772-1823) as an analytical tool. I consider the arguments of major contemporary Japanese policymakers as the object of analysis.

In order to do that, I have the following questions: Did the early Meiji era Japanese government adopt this policy when it began to import goods for heavy industry (metallurgy, machinery, shipbuilding, weapon manufacturing, etc.) as reverse-engineering models and manufacturing technologies, and even brought in engineers and scientists (*okakae gaikokujin*: hired foreigners), mainly from Europe, to teach at schools and factories? How did policymakers understand this theory? Did they accept it unaltered from its origins in the UK, or did they modify it to suit to their own country and situation? What characterized “their” comparative advantage theory, as understood by those who created and enacted the economic policy, particularly regarding industry and international trade after the *kaikoku* (opening the country to the world) and the Meiji restoration?

To address these questions, this paper is presented as follows: First, I briefly overview the Ricardian comparative advantage theory. Second, I provide a brief description of the characteristics of early Meiji Japanese economic structure to understand what sectors or goods had a comparative advantage. Third, I present and analyze the representative arguments of early Meiji policymakers about the economic policy that Japan needed to adopt then. Fourth, I explore how these policymakers understood the comparative advantage theory and the Western civilization that created it, as well as the importance of the memory of *kurofune* to this understanding.

Thus, I start by briefly presenting the Ricardian comparative advantage theory.¹ Although it might seem strange to explain a famous international trade theory formalized by a famous classical economist, I begin here because, according to an economist Paul Krugman, it is “a simple concept,” but “experience shows that it is a surprisingly hard concept to understand (or accept).”²

The main implication of comparative advantage theory is simple: each country (or any kind of economic unit) could maximize its wealth (or welfare or profit) by specializing in making goods

¹ The Ricardian comparative advantage model is explained in most standard international economics textbooks. See for example Paul Krugman, Maurice Obstfeld, and Marc J. Melitz, *International Economics* (tenth edition, Harlow: Pearson, 2015), chap. 3.

² *Ibid.*, p.56.

that are more efficiently produced (comparative advantage) than others, and export them in exchange for the comparatively disadvantageous ones.

Here, we must address what “comparative advantage” means. Ricardian comparative advantage refers to the relative production efficiency of one good compared to others within a country. Consider the “two countries (*A*, *B*) and two goods (*m*, *n*)” model, where *m* is more productive than *n* in *A*. In this case, *m* has a comparative advantage to *n* in *A* and *A* should specialize in producing *m*.

The theory becomes more complicated when we introduce the trade between *A* and *B*. Here too the comparative advantage means no more than the higher productivity in each country. Let us assume that the production cost (measured by person-hours) of *m* is 5 in *A* and 3 in *B*, whereas the production cost of *n* is 8 in *A* and 2 in *B* (see Fig.1). In this case, *m* has comparative advantage in *A* and *n* has that in *B*. It may seem that *B* has a comparative advantage to *A* in the production of both goods for they are more efficiently produced there, and that trade seems impractical as *m* and *n* produced in *A* are more costly and thus higher-priced. That is, however, not what Ricardo intended.

country \ good	m	n
	A	5
B	3	2

Fig.1 Production costs (person-hours)

The theory also states that even if one country produces both goods more efficiently than the other does, trade and increased wealth remain attainable for both countries. Assuming *A* has 80 person-hours for producing *m* and *n*, and that *A* allocates 40 for producing *m* and 40 for *n*, *A* produces 8 units of *m* and 5 of *n*. However, with the same person-hours, *A* could specialize in the production of *m* and produce 16 units. *A* could then export 6 units of *m* to *B* and import 9 units of *n* from *B*, which rate is because the production of *m* needs 3 person-hours per unit and that of *n* 2 person-hours, and so the value and price of *m* is 1.5 times that of *n*. Thus, *A* would have 10 units of *m* and 9 of *n* using the same 80 person-hours. This means that even a country with lower productivity than other countries for all goods could still increase its wealth through international trade.

In sum, comparative advantage theory claims that, in the world of free trade, each country should specialize in manufacturing their most efficiently produced goods. By exporting them and importing those with comparative disadvantage, the country could still increase its wealth.

2. ECONOMIC STRUCTURE OF EARLY MEIJI JAPAN

I now explore Japan’s economic structure in the early Meiji era to determine whether the course of early stage industrialization followed the comparative advantage theory. If the Japanese

government had economic rationality and followed the comparative advantage theory, it would have adopted an industrial economic policy that encouraged production of comparative advantage goods and an international trade policy of exporting those goods and importing comparative disadvantage ones.

Before the Meiji restoration, in the late Tokugawa period, industrial policy was conducted by the *han* (local government). As a natural consequence of the Tokugawa government's *sakoku* (national seclusion policy) for almost three centuries, each *han* encouraged producing goods to be consumed within its territory; and it promoted producing specialty goods to be sold outside to increase wealth in *han* territory. Konosuke Odaka characterized this policy "mercantilist."³

Many *hans* tried to encourage the brewing and textile industries at the end of the Tokugawa era.⁴ When *sakoku* ended and Japan was forced to engage in international trade, the possible export goods were mainly the products of these two industries, such as *sake* (Japanese rice wine), vinegar, soy sauce, and cotton (yarn and fabric) and silk products (silkworm eggs, yarn, and fabric).

After *kaikoku*, Japan began primarily exporting silk products in exchange for cotton ones.⁵ Other countries were interested in silk products, because *sake* and soy sauce were not popular abroad and many countries could produce vinegar and cotton products domestically. The import of cotton products also reflected the high productivity of the industry in Western countries, particularly the UK, which had already finished or were undergoing their own industrial revolutions.

According to Daniel Bernhofen and John Brown, the international trade pattern of early Meiji Japan followed the comparative advantage theory.⁶ As previously mentioned, the theory claims that goods with higher production efficiency rates should be exported and those with lower rates should be imported. Bernhofen and Brown measured the comparative production efficiency rates of goods by using their price rising rate after *kaikoku* (proxy variable of internal-external

³ Konosuke Odaka, "Josho [Introduction]" (in Japanese, in Yuzo Yamamoto and Konosuke Odaka, eds., *Bakumatsu Meiji no Nihon Keizai* [Japanese Economy in the late Tokugawa and Meiji eras], Tokyo: Nihon Keizai Shinbunsha, 1988), p.12.

⁴ Takeshi Abe, "Kinsei Nihon ni okeru Men Orimono Seisandaka [Output of Cotton Fabric in early-Modern Japan]" (in Japanese, in Yamamoto and Odaka, eds., *Bakumatsu Meiji, op. cit.*), p.69.

⁵ See Abe, "Kinsei Nihon," *op. cit.*, p.69; Daniel Bernhofen and John Brown, "A Direct Test of the Theory of Comparative Advantage" (*Journal of Political Economy* 112-1, 2004), p.57.

⁶ Bernhofen and Brown, "A Direct Test," *op. cit.*, pp.62-4. See also Tetsuji Okazaki, Eisuke Taniyama and Masaki Nakabayashi, "Nihon ni okeru Kyodotai Kankei no Yakuwari [Role of Community Relation in Japan]" (in Japanese, in Yasuyuki Sawada and Tetsushi Sonobe, eds., *Shijo to Keizai Hatten* [Market and Economic Development], Tokyo: Toyo Keizai Shinposha, 2006), pp.46-51.

comparative price in the autarchy era) and found that goods with higher production efficiency began to be exported and less production-efficient ones were imported.⁷

Introduction of international trade brought an increase in wealth to Japan. The comparative advantage theory was, therefore, well-suited to the late Tokugawa and early Meiji eras. According to Bernhofen and Brown, “at most the gain in real income was 8 to 9 percent of GDP.”⁸ *Kaikoku* enhanced Japan’s economy by making it possible to sell comparative advantage goods to other countries and to buy comparative disadvantage ones from them.

Policymakers in the early Meiji government were impressed by the impact of international trade on their economy and on the welfare of the people. They were interested in encouraging international trade, primarily exporting silk products, and importing cotton ones, above all else.⁹

The import of investment goods or heavy industry products occurred at a relatively low rate. According to Bernhofen and Brown, weapons, ammunition, machinery, instruments, and others accounted for little more than 15 percent of imports in 1868-1875, whereas cotton yarn and cloth added up to more than 30 percent.¹⁰ This seems odd considering the post-restoration era corresponded with the age of globalizing imperialism, when industrialization and modernization were regarded as crucial for every developing country to avoid colonization, for which these products were essential.

In the mid-1870s the situation began to change as two factions emerged among Japanese policymakers. They collided over economic policy, particularly industrial and international trade.¹¹ The first faction, which we could call the Nationalist and was represented by Shigenobu Okuma (1838-1922) and Takayoshi Kido (1833-1877), adopted an export-oriented policy that encouraged the growth of existing sectors, starting with agriculture and textile (especially silk) production, and the export of their products in exchange for trains, ships, or machinery.¹² The second faction, which could be called the Modernist and gathered around Toshimichi Okubo (1830-1878), Tomomi

⁷ Bernhofen and Brown, “A Direct Test,” op. cit., p.63.

⁸ Daniel Bernhofen and John Brown, “An Empirical Assessment of the Comparative Advantage Gains from Trade” (*American Economic Review* 95-1, 2005), p.210.

⁹ See Osamu Saito, “Bakumatsu Ishin no Seiji Sanjutsu [Political Arithmetic in the late Tokugawa and Meiji Restoration eras]” (in Japanese, in Kindai Nihon Kenkyukai, ed., *Meiji Ishin no Kakushin to Renzoku* [Change and Continuity in Meiji Restoration], Tokyo: Yamakawa Shuppansha, 1992).

¹⁰ Bernhofen and Brown, “A Direct Test,” op. cit., p.57.

¹¹ See Hiromichi Ishizuka, *Nihon Shihonshugi Seiritsu Shi Kenkyu* [Studies on the History of the Establishment of Japanese Capitalism] (in Japanese, Tokyo: Yoshikawa Kobunkan, 1973), pp.3-8, 108-115, 292.

¹² Masaaki Kobayashi stated that Japan could only export products of existing industries because it did not have customs autonomy in early Meiji era. Masaaki Kobayashi, *Nihon no Kogyoka to Kangyo Haraisage* [Japanese Industrialization and “Meiji Privatization”] (in Japanese, Tokyo: Toyo Keizai Shinposha, 1977), p.72.

Iwakura (1825-1883), Hirobumi Ito (1841-1909), and Masayoshi Matsukata (1835-1924), adopted the import substitution economic policy line, which sought to introduce heavy industry manufacturing technology, to invite Western engineers and professors to Japan and hire them, and to import machinery for reverse-engineering, in order to develop heavy industry in Japan.¹³

The confrontation over the economic policies resulted in the so-called “governmental crisis of the 14th year of Meiji (1882),” where the Modernist faction led by Ito expelled Okuma and his allies, that is to say the Nationalist faction, from government. The newly nominated Minister of Finance, Matsukata, began the radical austerity policy (*Matsukata Zaisei*) to collect and keep money for the investment in domestic secondary and tertiary industries, starting with the heavy (particularly locomotive and steamship) and shipping industries.¹⁴

3. ECONOMIC THOUGHT OF EARLY MEIJI POLICYMAKERS

Next, I explore the theoretical background of the early Meiji policymakers’ economic policy, particularly industrialization and international trade. To do so, I must first analyze the previously mentioned policy discourses of the Nationalist and Modernist factions.

Economic policy in early Meiji Japan was characterized by the slogan “enrich the country and strengthen the army (*fukoku kyohei*).”¹⁵ According to this view, Japan opened its doors to other countries in the age of emergent imperialism, and policymakers of the new Meiji government had to find a way to avoid colonization. Thinking that the key to *fukoku kyohei* was heavy industry that produced machinery and weapons necessary for realizing the second purpose (*kyohei*), they encouraged the exportation of silk products and certain consumption goods and the importation of machinery, weapons, and related technologies.

This international trade pattern seems to follow the comparative advantage theory, but policymakers had a different goal for economic policy. Silk products were comparative advantage goods, whereas machinery and weapons were comparatively disadvantageous in Japan at that time. According to the theory, specialization in the production of comparative advantage goods—silk products—should increase the wealth of the nation. Policymakers, however, wanted to develop the then comparatively disadvantageous heavy industry, to realize not only *fukoku* but also *kyohei*. They encouraged the exportation of silk products to earn the necessary funds to

¹³ According to Hiroshi Nakanishi, policymakers just before and after the Meiji restoration were generally ignorant of and indifferent to heavy industry. Hiroshi Nakanishi, *Nihon Kindaika no Kiso Katei* [Fundamental Process of Japanese Modernization] (in Japanese, 3 Vols., Tokyo: Tokyo Daigaku Shuppankai, 1982/1983/2003), Vol.1, pp.6, 265, 312.

¹⁴ See Mikio Harada, *Nihon no Kindaika to Keizai Seisaku* [Modernization and Economic Policy in Japan] (in Japanese, Tokyo: Toyo Keizai Shinposha, 1972), p.273.

¹⁵ See for example Ishizuka, *Nihon Shihonshyugi*, *op. cit.*, pp.5-6; Kanji Ishii, *Meiji Ishin Shi* [History of Meiji Restoration] (in Japanese, Tokyo: Kodansha, 2018, original edition, 1989), p.325; Haruhito Takeda, *Nihon Keizai Shi* [Japanese Economic History] (in Japanese, Tokyo: Yuhikaku, 2019), p.131.

develop heavy industry and hastened the importation of heavy industry products to use them as models for setting up factories in Japan. Exportation of comparative advantage goods was not a goal but a means for them.

The political stance shared by Japanese policymakers can be found in two policy documents: the Declaration Establishing the Ministry of Industry (*Kobusho wo Mokeru no Mune*) issued in 1870 and written by the leader of the Nationalist faction, Okuma, and the Proposition of Establishing the National Exportation Company (*Kaigai Chokubai no Kigyo wo Hiraku no Gi*) written in 1876 by the leader of the Modernist faction, Okubo.¹⁶ In the former, Okuma said that the “world of iron” was spreading in Western countries, where the development of sciences and technologies encouraged the production of iron goods, such as trains and ships, which were the foundation of national wealth and power. In the latter document, Okubo presented the normal course of development of a national economy: of agriculture, industry, and then commerce. According to him, economic policy, particularly regarding industrial and international trade, must agree with this course.

Although the Nationalist and Modernist factions clashed, which resulted in a political purge with a huge historical impact,¹⁷ they shared a purpose and economic theoretical framework: *fukoku kyohei*, and comparative advantage theory. Where they disagreed was on the concrete political line to take. The Nationalists chose import substitution policies to achieve rapid heavy industrialization, whereas the Modernists chose export-oriented ones to earn money to invest in heavy industrialization.¹⁸

4. “MOVEMENT” AS A KEY TO MODERNIZATION

¹⁶ “Kobusho wo Mokuru no Mune,” wholly cited in Hirofumi Yamamoto, “Shoki Shokusan Seisaku to sono Shusei [Industrial Policy in Early Stage and its Transformation]” (in Japanese, in Yoshio Ando, ed., *Nihon Keizai Seisaku Shi Ron* [Studies on the History of Japanese Economic Policy], 2 Vols., Tokyo: Tokyo Daigaku Shuppankai, 1973, Vol.1), pp.28-9; “Kaigai Chokubai no Kigyo wo Hiraku no Gi” (in Masanori Nakamura, Kanji Ishii and Yutaka Kasuga, eds., *Keizai Koso* [Economic Ideas] (Tokyo: Iwanami Shoten, 1988), pp.40-4.

¹⁷ Some of the purged individuals criticized and opposed the government in various ways. For example, Okuma, the main target of the purge, established a new political party called *Rikken Kaishin To* (Constitutional Reformist Party) shortly after the crisis and demanded the reinforcement of local self-government and the extension of (male) voting right, criticizing the government as despotic and clientelist. He and his party later assisted with the introduction of parliamentary system in Japan in the 1890s.

¹⁸ This important point is clearly noted in Minoru Sawai and Masayuki Tanimoto, *Nihon Keizai Shi* [Japanese Economic History] (in Japanese, Tokyo: Yuhikaku, 2016), p.119.

In this section, I tackle the remaining question: why did the early Meiji policymakers emphasize the importance of trains and ships as heavy industry products and that of railway and shipping as tertiary industries?

The Ministry of Industry concentrated its effort and funds on the construction of railroads: in the early Meiji era, almost half of its budget was used for it, especially for the construction of the Tokyo-Yokohama and Kyoto-Kobe railroads.¹⁹ The government also established public factories to function as test sites for new technologies and as a model for private factories. In the 1880s, there were twice the steamship construction factories than machine manufacturing ones in the public sector.²⁰

The government also supported the tertiary railroad and shipping industries financially, legally, and administratively: it constructed railroads with public money, lent public land for railroads to private railway companies for free, sold public ships cheaply to private shipping companies, granted them a subsidy, and enacted the Shipping and Ship Building Encouragement Act (1896).²¹

Early Meiji policymakers regarded trains, ships, their manufacture, and railway and shipping activities as important because they represented “movement” of men, goods, and information. For them, “movement” was key to modernizing the nation. They tried to encourage “movement,” for modernization was a precondition of *fukoku kyohei*, their main and ultimate objective.

“Movement” was important for policymakers for two reasons. First, it generated wealth. Consider the case of the so-called Iwakura mission. In 1871, three years after the Meiji restoration, the new government sent a mission to the USA and Europe to negotiate the revision of treaties that the Tokugawa government had conducted and that were disadvantageous to Japan. The mission, led by Iwakura as the ambassador extraordinary and plenipotentiary, comprised policymakers of the Meiji government, such as Kido, Okubo, and Ito. It lasted almost two years, but could not succeed in revising the treaties. It was, however, important for the modernization of

¹⁹ See Ishizuka, *Nihon Shihonshyugi*, *op. cit.*, pp.108-111.

²⁰ Hirotake Koyama, *Nihon Gunji Kogyo no Shiteki Bunseki* [Historical Analysis of Japanese Military Industry] (in Japanese, Tokyo: Ochanomizu Shobo, 1972), pp.102-8.

²¹ Mataji Umemura, “Matsukata Defure ka no Kangyo Seisaku [Industrial Policy under the so-called Matsukata Defratriation]” (in Japanese, in Mataji Umemura and Takafusa Nakamura, eds., *Matsukata Zaisei to Syokusan Kogyo Seisaku* [Financial Policy by Matsukata as Minister of Finance and Industrial Policy] (in Japanese, Tokyo: Tokyo Daigaku Shuppankai, 1983), pp.239-240; Shunsaku Nishikawa and Takeshi Abe, “Gaisetsu [Overview]” (in Japanese, in Id, eds., *Sangyoka no Jidai* [The Age of Industrialization], Vol. 1, Tokyo: Iwanami Shoten, 1990), pp.23-6; Minoru Sawai, “Kikai Kogyo [Machine Industry]” (in Japanese, in *Idem.*), pp.215-8; Takafusa Nakamura, “Macro Keizai to Sengo Keiei [Macro Economy and post-Sino-Japanese-war Economic Policy]” (in Japanese, in Shunsaku Nishikawa and Yuzo Yamamoto, eds., *Sangyoka no Jidai*, Tokyo: Iwanami Shoten, Vol. 2), pp.24-6.

Japan because it allowed policymakers to experience modernized Western society. As they realized the overwhelming inequality of wealth and power that existed between Japan and Western countries, they decided to use them as a goal, translated “modernization” into “Westernization,” and tried to identify the key to modernization in Western civilization.

According to the official report by the Secretary of Mission Kunitake Kume (1839-1931),²² members were greatly impressed by the importance of “movement,” both of people encouraged by their sociability, and that of goods realized by international trade. Western people were sociable and enjoyed going out and meeting friends, talking with neighbors, and so on, whereas the Japanese preferred to stay at home. This sociability meant that people frequently gathered in public spaces, exchanged information, broadened their knowledge, and had more opportunities to acquire wealth. Second, Western people regarded international trade as an essential economic activity. Even farmers and artisans were interested in it, unlike in Japan. Eastern and Southern countries provided raw materials to Western ones, which processed them and sold the products back for high profits.

Another reason why early Meiji policymakers thought that “movement” was crucial for *fukoku kyohei* was due to the memory of *kurofune* when they came to Japan. People described *kurofune* as “flying birds,”²³ and in the late Tokugawa era, they would have been even more impressive compared to Japanese ships, which were generally small, wooden vessels. They were the symbol of the power of civilization and modernization, for they made “movement” more rapid and easier.²⁴

The impact of this memory of *kurofune* on the importance of “movement” for modernization was clearly expressed by Yukichi Fukuzawa (1835-1901), a Meiji intellectual who wrote many bestseller books that introduced Western civilization to a previously isolated Japanese audience and became the most influential ideologue of modernization in the Meiji era.²⁵ Fukuzawa realized that they were in the age of “movement” when international trade brought the “movement” of goods and the increase in wealth, and when humans could make progress by physically moving to interact with other people.²⁶

²² Kunitake Kume, *Tokumei Zenken Taishi Beio Kairan Jikki* [Real Record of Visit to America and Europe by the Ambassador Extraordinary and Plenipotentiary] (in Japanese, 5 Vols., Tokyo: Iwanami Shoten, 1977-82, originally published in 1878). See Vol.1, pp.82, 100, 360, Vol.2, 253-4, Vol.3, 298.

²³ Yuzo Kato, *Kurofune Ihen* [Black Ships Incident] (in Japanese, Tokyo: Iwanami Shoten, 1988), p.2.

²⁴ *Idem.*, pp.51, 116.

²⁵ For more on his life and thought in general, see for example Albert Craig, *Civilization and Enlightenment* (Cambridge, MA: Harvard University Press, 2009); Alain MacFarlane, *Secrets of the Modern World: Yukichi Fukuzawa* (Milton Keynes, the UK: Nimble Books, 2011).

²⁶ *Id.*, “Boeki Rikkoku Ron [Building Country by International Trade]” (in Japanese, in Nakamura, Ishii and Kasuga, eds., *Keizai Koso, op. cit.*, originally published in 1884), pp.257-9; *Id.*, “Hi Naichi

According to him, the Tokugawa government decided to open the country, aware of the presence of and afraid of the power of *kurofune*, which was itself an innovation of the transportation manufacturing industry.²⁷ The memory of *kurofune* asserted that Western progress was above all else the result of the development of the transportation and transportation manufacturing industries.²⁸

In sum, the collective memory of *kurofune* convinced policy holders that “movement” of men, goods, or information was crucial to modernization and to *fukoku kyohei*, and thus contributed to the encouragement of transportation-related industries.

5. CONCLUSION

After examining the economic structure of late Tokugawa and early Meiji Japan, especially regarding industry and international trade, their comprehension of the comparative advantage theory, and the impact of their memory of *kurofune* on their policies, we can see that both factions of early Meiji policymakers shared the belief that economic policy based on the comparative advantage theory was an effective tool for their ultimate purpose, *fukoku kyohei*. The theory claims that the production of comparative advantage goods by each country would result in monoculturization, international trade and division of labor, and each nation’s increased wealth. However, they realized that the adoption of economic policy wholly based on comparative advantage theory would lead Japan to the monoculture of silk goods and would contribute to *fukoku* (enriching the country), but not *kyohei* (strengthening the army), for the latter needed heavy industrialization, especially in the age of imperialism.

Heavy industrialization, however, was a difficult task. New technologies were necessary to transform the economic structure, but the Japanese heavy industry, especially the machine industry, did not expand in the early Meiji era. This phenomenon hastened the importation of

Zakkyo Ron ni tsuite [On the non-mixed residence between the Japanese and Foreigners]” (in Japanese, in *Idem.*, originally published in 1893), pp.375-7.

²⁷ Yukichi Fukuzawa, “Naichi Ryoko Nishi Sensei no Ron wo Bakusu [Criticism of Mr. Nishi’s Argument on Inner Trip by Foreigners]” (in Japanese, in *Idem.*, *Fukuzawa Yukichi Zenshu* [Complete Works], Tokyo: Iwanami Shoten, Vol. 19, 1962, originally published in 1875), p.543; *Idem.*, *Fukuo Jiden* [Autobiography] (in Japanese, Tokyo: Iwanami Shoten, 1978, originally published in 1899), pp.31, 64.

²⁸ *Idem.*, “Datsua Ron [On Exiting from Asia]” (in Japanese, in *Fukuzawa Yukichi Chosakushu* [Selective Works], Tokyo: Keio Daigaku Shuppankai, Vol. 8, 2003, originally published in 1885), pp.260-2; *Idem.*, “Hi Naichi Zakkyo Ron ni tsuite,” *op. cit.*, pp.370-1.

capital goods, which in turn hindered technological expansion.²⁹ Japanese heavy industry was about to enter this vicious cycle.

It was aided by the recovery of customs autonomy in 1899. The government could use the customs policy to modify relative prices and, thus, the comparative advantage of goods. Customs on certain foods (sugar, flour), paper, woolen cloth, and machines rose gradually and functioned as a major protective policy.³⁰ Their comparative advantage, including that of machines, increased artificially.

After the Sino–Japanese War (1894-1895), the Japanese government began an industrial policy that encouraged iron, ship building, and shipping industries. This is said to be the result of the war,³¹ but I suggest that it also resulted from the interest of policymakers in “movement,” as a product of the memory of *kurofune*.

²⁹ Takamasa Ichikawa, “Yunyu Daitai Kogyoka no Katei to sono Ninaite [Process and Carriers of the Industrialization of Import Substitution Type]” (in Japanese, in Yamamoto and Odaka, eds., *Bakumatsu Meiji, op. cit.*), pp.235-6.

³⁰ Hideaki Miyajima, *Sangyo Seisaku to Kigyo Touchi no Keizai Shi* [Economic History of industrial Policy and Company Governance] (Tokyo: Yuhikaku, 2004), pp.28-30.

³¹ *Ibid.*, p.33.