EE482 Industrialization: Role of Public and Private Sectors (Section 046401)

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Chapter 2

Industrialization in Japan

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Chapter 2

Economic and Industrial Development: A Case Study of Japan

1. <u>Introduction</u>

Japan is the first Asian country that has successfully utilized industrialization to develop its economy and is the first in Asia to elevate the average income of its population to a high level. The economic development process of Japan encompasses various intriguing aspects. Therefore, this chapter presents a sequence of events that initiated the transformation in Japan, starting with the recovery of Meiji, which marked the beginning of changes in governance and the industrial revolution in Japan. Furthermore, Japan is the first country to serve as a model for formulating industrial policies, in which the government selects target industries and provides support through various policies to make these industries strong and internationally competitive.

This chapter also discusses the details of the individuals behind Japan's successful development, particularly Dr. Osamu Shimomura, who formulated a theory and implemented it in economic development planning that doubled income per capita and elevated Japan to a high-income country within just seven years, faster than the initially set ten-year plan.

In addition to Japan's successful utilization of industrial policies, its production structure also has unique characteristics in the form of a large-scale production network. This structural difference in the industrial and economic framework of Japan from other countries is discussed, including the characteristics of Zaibatsu and Keiretsu, outsourcing networks, and the economic structure that includes a large number of medium-sized and small-sized enterprises (SMEs) interconnected and presented in this chapter.

The final section of this chapter presents lessons from Japan's industrial development case study and highlights points that can be beneficial for other developing countries to apply. It also includes caution for the current situation.

2.1 Meiji Restoration and Japan’s Industrialization

The United States Navy and the Enforcement of Trade Openness in Japan

In 1853, the United States Navy, led by Commodore Matthew Perry, came to Japan and made them open up Tokyo Bay. Back then, Japan was ruled by the Tokugawa Shogunate, which had closed Japan to outsiders and limited trade with other countries since 1603. The Tokugawa Shogunate agreed to a trade deal with the United States because the U.S. had much more advanced military technology, including powerful ships and big guns. In contrast, Japan mostly had wooden ships that were rowed, and they mainly used swords, bows, and arrows. This decision didn't sit well with many people in Japan, and the Tokugawa Shogunate lost popularity. As a result, some influential groups in Japan started pushing for a change in the government to bring in a new era.

Figure 2.1: USS Powhatan (Sidewheel-Steam Frigate)

Source: https://www.militaryfactory.com/ships/detail.asp?ship_id=USS-Powhatan-1850-Sidewheel-Steam-Frigate

Figure 2.2: Japanese Depiction of Perry's Black Ship

Source: https://www.insidekyoto.com/kyoto-samurai

Figure 2.3: American Commodore Matthew Perry

Source: http://factsanddetails.com/japan/cat16/sub108/item516.html

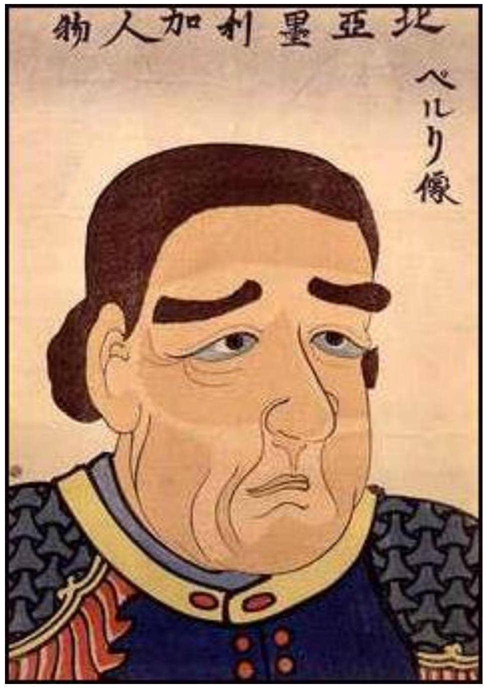


Figure 2.4: Japanese Depiction of Commodore Matthew Perry

Source: http://factsanddetails.com/japan/cat16/sub108/item516.html

Figure 2.5: Treaty of Amity and Commerce between Japan and the US, 1858

Source: http://factsanddetails.com/japan/cat16/sub108/item516.html

Why Nations Fail: Japan's Meiji Restoration

On October 14, 1867, Ōkubo Toshimichi, who was still a minor samurai in the Satsuma region, journeyed from the capital city of Edo (now Tokyo) to the city of Yamaguchi. His purpose was to meet with leaders from the Chōshū region and present a plan to overthrow the Tokugawa Shogunate. The Chōshū leaders agreed to this plan and collaborated with the Tosa and Aki domains to form a secret alliance called the Satsuma-Chōshū Alliance.

By the year 1868, Japan was still considered underdeveloped economically, and the governance system was firmly under the control of the Tokugawa Shogunate since 1600. However, in 1863, the Emperor had his powers significantly reduced, although he remained a symbol of the country and participated in important ceremonies.

Figure 2.6: Ōkubo Toshimichi (young Samurai)

Source: published by 東洋文化協會 (The Eastern Culture ssociation) - The Japanese book "幕末・明治・大正 回顧八十年史" (Memories for 80 years, Bakumatsu, Meiji, Taisho)

Figure 2.7: Ōkubo Toshimichi (Finance Minister)

Source: published by 東洋文化協會 (The Eastern Culture ssociation) - The Japanese book "幕末・明治・大正 回顧八十年史" (Memories for 80 years, Bakumatsu, Meiji, Taisho)

The social and economic system in Japan during this period was similar to that of Europe during the Middle Ages. Each region had its own lord who governed, allocated landownership, and collected taxes to be sent to the shogun in the Tokugawa clan. At that time, Japanese society was divided into distinct occupations and social classes, including the samurai, merchants, and peasants. Foreign trade was heavily regulated by the Tokugawa clan, and the entry of foreigners into Japan was restricted, resulting in Japan being relatively closed off from the rest of the world.

However, there was this place called the Satsuma domain, and it was different. They could make their own rules and trade with foreigners. This allowed people in this region to learn from and exchange with Western countries, leading to different perspectives on the economy and society compared to other regions in Japan. It also brought awareness of technological differences and governance structures that contributed to Japan's delayed development

Figure 2.8: 19^{th} Century Samurai

Source: https://www.insidekyoto.com/kyoto-samurai

Figure 2.9: Samurai with Sword in 1860

Source: J. Paul Getty Museum (Partial gift from the Wilson Centre for Photography, object no. 2007.26.155), digital image courtesy of the Getty's Open Content Program

Figure 2.10: Samurai in Armour in 1860

Source: J. Paul Getty Museum (Partial gift from the Wilson Centre for Photography, object no. 2007.26.155), digital image courtesy of the Getty's Open Content Program

During the military movements to seize power, there was a proposal for Choshu and Satsuma to relinquish their authority to avoid a civil war. Subsequently, Choshu and Satsuma accepted this proposal. On January 3, 1868, the Meiji Restoration was declared, and the restoration of imperial power began. Forces from Satsuma and Choshu captured Edo and Kyoto. On January 27, 1868, former Choshu leaders attacked the armies of Satsuma and Choshu, leading to a civil war that continued until the mid-year. Ultimately, the Yoshinobu clan was defeated in this conflict.

Following the proclamation of the Meiji Restoration in 1869, the feudal lord system was abolished, and the government reorganized the country into prefectures. Provincial governors were appointed, and the tax system underwent changes. All citizens received equal rights under the law, trade with foreign nations was no longer prohibited, and private land ownership rights were granted.

Figure 2.11: Tokugawa Yoshinobu

Source: http://factsanddetails.com/japan/cat16/sub108/item516.html

After the reform of the governance structure, the new regime in Japan wanted to find a good way to make Japan better. During the years 1871-1873, Okubo Toshimichi joined a group of Japanese officials and planners on a big trip called the Iwakura Mission. They traveled around the world to talk to Western countries regarding making better deals with Japan. They even invited Professor Lorenz von Stein, a German scholar, as a consultant for governance and constitution drafting.

In 1890, Japan became the first country in Asia to have a written constitution and established a system of government with an emperor, a parliament, a constitution, and an independent judiciary. It also introduced an electoral system. All of these were essential factors that allowed Japan to benefit from learning governance, economic systems, and social organization from Western countries, especially Germany. This enabled Japan to become the first industrialized country in Asia. Meanwhile, during the same period, China faced issues, including revolts in southern China from 1850 to 1864 and difficulties. The structural changes within China occurred in 1911 and again in 1949.

While Japan served as a model for internal structural reform and utilized industrial revolution to transform its economic potential, conflicts and dissatisfaction still emerged among certain groups, particularly former samurai, who viewed these changes as a betrayal of the samurai class. These conflicts became evident through the assassination of Okubo Toshimichi in 1878 while he was riding a horse-drawn carriage to the Tokyo Imperial Palace

Figure 2.12: A print depicting the start of Japan’s first rail service, from Tokyo’s Shinbashi to Yokohama. Utagawa Hiroshige III, 1872

Source: Utagawa Hiroshige III, 1872. (Courtesy of the Minato City Local History Museum) https://www.nippon.com/en/japan-topics/b06904/japan%E2%80%99s-industrial-revolution.html

Figure 2.13: An image of the Tomioka Silk Mill in Gunma Prefecture. Utagawa Kuniteru II, 1873

Source: Utagawa Kuniteru II, 1873. (Courtesy of the National Diet Library) https://www.nippon.com/en/japan-topics/b06904/japan%E2%80%99s-industrial-revolution.html

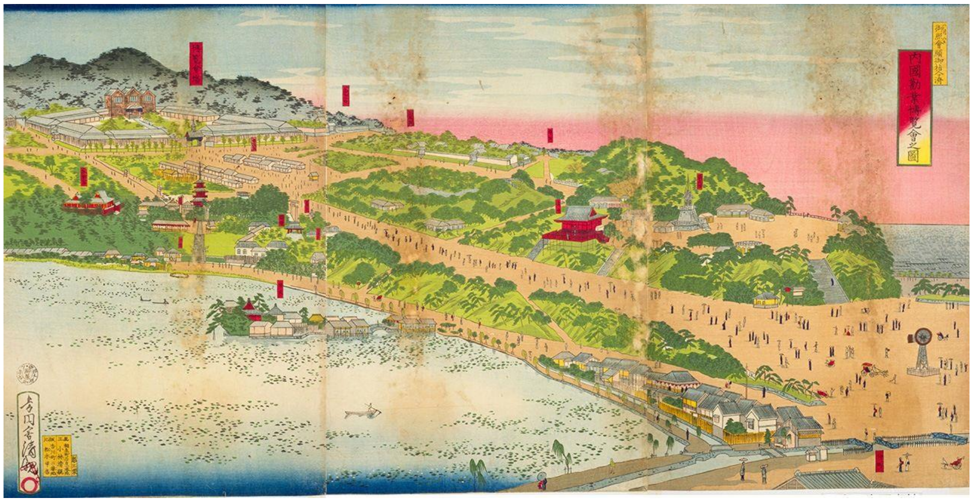


Figure 2.14: The first Domestic Industrial Exposition. Kobayashi Kiyochika, 1877

Source: Utagawa Kuniteru II, 1873. (Courtesy of the National Diet Library) https://www.nippon.com/en/japan-topics/b06904/japan%E2%80%99s-industrial-revolution.html

Figure 2.15: Children Learning at a Terakoya

Source: Issunshi Hanasato, ca. 1844–48. (Courtesy of the Tokyo Metropolitan Library)

The Edo Period Roots of Modernization

Various aspects of Japan's economic and social systems have been crucial factors in its rapid development since the Tokugawa era. During this period, not only did the samurai class receive education, but common people also had the right to be educated through Terakoya system, where temples in each region served as teachers, enabling people to read and write. Subsequently, the establishment of printing presses and the publication of books became widespread, allowing the Japanese population to continuously enhance their knowledge and develop various skills.

Japan independently developed its teaching and mathematical calculation system known as "Wasan," which made basic calculations easily understandable for the general public. During this time, Japan arguably had the world's best basic education system. These foundations were crucial for Japan to learn and adapt to technology. Furthermore, Japan encouraged the rapid adoption of new technologies imported from abroad. This led to a dedicated workforce continually learning and improving their skills.

It is worth noting that many Japanese politicians come from a lineage of political backgrounds, such as the case of Mr. Taro Aso.

Figure 2.15: Mr. Taro Aso

Source: https://www.kantei.go.jp/jp/98_abe/meibo_b/daijin/aso_taro.html

Mr. Taro Aso served as the Prime Minister of Japan during the years 2008-2009 and held positions as Deputy Prime Minister, Minister of Finance, and Minister of Foreign Affairs. He is a member of the Okubo-Toshimichi clan and is the grandson of Prime Minister Shigeru Yoshida (who served in 1946-1947 and 1948-1954)

2.2 History of Japan's Economic Development After World War II

History of the Economic Development of Japan

The economic development history of Japan is divided into different periods, starting from the post-World War II recovery to becoming a developed nation, and later experiencing economic stagnation. Studying this economic journey is very useful in understanding the diverse economic situations, including rapid growth, subsequent slowdown, and long-lasting economic challenges.

1) **Post-WWII Recovery (1945-1955):** This period marks Japan's efforts to rebuild its economy after the devastation of World War II.
2) **High Economic Growth Era (1956-1970):** During this time, Japan experienced rapid economic growth.
3) **Economic Stagnation (1971-1990):** Japan faced economic challenges, including stagnation, in the following decades.
4) **Low Economic Growth Era (1990-Present):** Japan's economic growth remained at a low level from 1990 onwards.

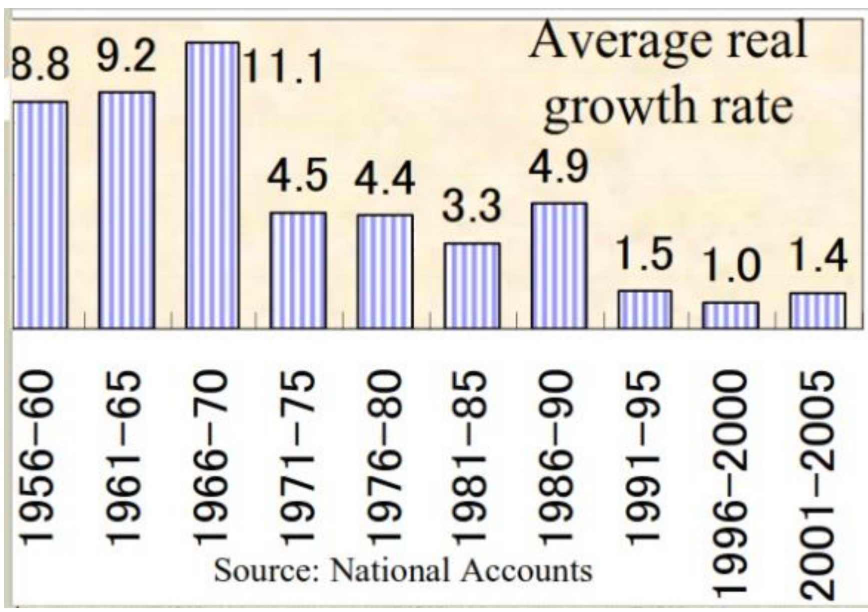


Figure 2.16: Growth Rates of the Japanese Economy in Various Periods

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

(1) Post-WWII Economic Recovery (1945 – 1955)

After World War II, Japan faced severe damages as a result of the war, with significant consequences, including:

- The loss of approximately 2.8 million people (about 4% of the total population).
- The destruction of machinery, buildings, and property amounting to about 25% of the total.
- A sharp decline in production capacity, remaining at only 10% of pre-war levels.
- High inflation due to material and mineral shortages.

Following World War II, the central command of the Allied forces laid the foundation for Japan's economic and social structure, enacting significant laws, including:

- Reducing the role of Zaibatsu conglomerates: The economic structure of Japan at that time was dominated by four major Zaibatsu companies - Mitsui, Mitsubishi, Sumitomo, and Yasuda, each with a vast network of subsidiary companies and diverse business interests. In 1945, legislation was passed to reduce the influence of these companies, aiming to promote a more distributed economic structure.
- Enforcing fair trade laws: This initiative followed the reduction of Zaibatsu influence and focused on reducing monopolistic practices, similar to the Anti-Trust laws in the United States. It also included laws to control securities trading, promoting transparency and fairness.
- Agricultural reforms: The government reformed land ownership by purchasing land, taking over ownerless land, and distributing land to small-scale farmers. These policies reduced the percentage of farmers leasing land from 46% to just 10%.
- Educational reforms: The mandatory education period was extended from 6 to 9 years.
- Labor market reforms: Labor unions were legalized in 1945, and legislation concerning labor standards and welfare was enacted in 1947.

In addition to these reforms, there were important policies, including:

- Targeting industries to address industrial raw material shortages. By 1947, production had increased to 31% of pre-war levels, and by 1949, it had expanded to 80%.
- The Korean War played a significant role in expanding Japan's demand for goods, as the United States required equipment and supplies for the war effort.

This resulted in a significant proportion of exports and led Japan to achieve a GDP level equal to the pre-war value in 1952.

(2) High Economic Expansion Era (1956 – 1970)

The economic growth of Japan during the period from AD 1956 to 1970 can be considered a pinnacle of prosperity. When calculating the long-term economic growth rate during this period, it is evident that Japan's economic growth averaged 9.3% from 1955 to 1972. The key driver of this rapid growth was economic planning, achieved through the establishment of clear growth targets at both the sectoral and national levels within the framework of the National Economic and Social Development Plans, each spanning five years.

During the years from AD 1956 to 1970, Japan achieved significant success in attaining the growth objectives set in each development plan, as depicted in Figure 2.17.

Name	Plan period	Major purposes	Growth target /actual growth
1.Economic Self-Reliance Plan	1956 ~1960	Economic self-reliance Full employment	4.9% 8.8%
3.Doubling National Income Plan	1961 ~1970	High growth Higher living standard	7.8% 10.0%
5.Economic and Social Development Plan	1967 ~1971	Balanced and fulfilled economy/society	8.2% 9.8%
7.Economic and Social Basic Plan	1973 ~1977	People's welfare International relations	9.4% 3.5%
8.Economic Plan for 2nd Half of the 1970s	1976 ~1980	Stable development Fulfilled people's living	6%+ 4.5%

Figure 2.17: National Economic and Social Development Plans of Japan from AD 1956-1980

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

Continuous changes in Japan's production structure occurred, with the government playing a role in stimulating growth in target industries as outlined in the government's economic development plans. This shift involved transitioning from industries with low value-added to those with high value-added, encompassing sectors such as metals, chemicals, machinery, and energy.

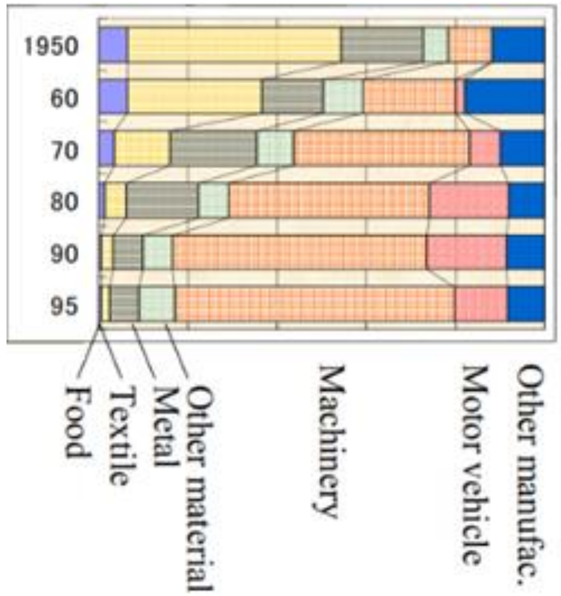


Figure 2.18: The Impact of Industrial Policies on Japan's Export Structure Changes

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

The significant expansion of these industries was driven by export promotion efforts, including the use of a financial tool known as "Window Guidance," which allocated loans specifically to target industries. This was a collaborative effort between the Ministry of Finance, the Bank of Japan, and MITI (Ministry of International Trade and Industry). Additionally, the government supported target industries through various other measures, such as special exchange rates, assistance with transportation and logistics, establishment of the country's merchant fleet to aid in exports and imports, and the imposition of tariff walls to protect domestic industries from foreign competition and market saturation.

The government's intervention led to a substantial expansion of production capacity, resulting in high growth rates in the market during the period from 1956 to 1970. This was the most crucial factor in driving rapid growth in Gross Domestic Product (GDP). Although the Japanese government emphasized export-oriented activities as the primary focus, an analysis of economic data at the sectoral level reveals that Japan's economy was not primarily driven by export-led growth but rather by investment-led growth. As shown in Figure 2.19, a significant portion of GDP growth came from high private sector investment that aimed to expand production capacity during that period. The concept and underlying policies of investment-led growth originated from the theories of Dr. Osamu Shimomura, which will be elaborated further in the following section.

Figure 2.19: Compare the effects of exports and private sector investments on the growth of Japan's GDP.

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

In addition to continuous support for both exports and private sector investments, the Japanese government also implemented a policy to relocate the workforce from various provinces to Tokyo, involving approximately 1 million people (or the Shudan Shuskoku policy during 1955-1965) as shown in Figure 2.20. This policy resulted from a shared belief in creating economic growth focused on a trickle-down approach. Each time economic development plans were formulated, the government and the private sector engaged in collaborative discussions until a consensus was reached on setting goals and allocating responsibilities to coordinate the development plans.

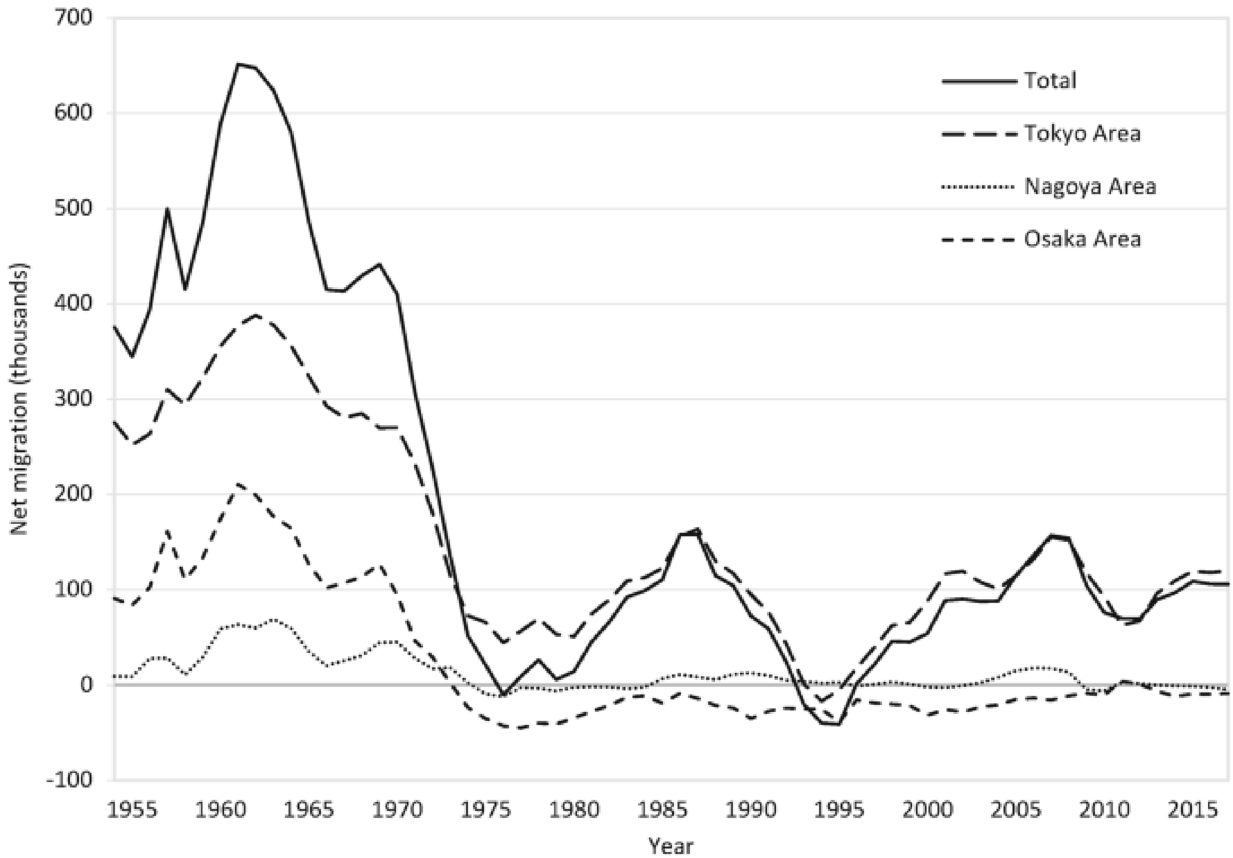


Figure 2.20: Relocation of the Workforce from Rural Areas to Big Cities

Source: Ishikawa, Y. (2020). Internal Migration in Japan. In: Bell, M., Bernard, A., Charles-Edwards, E., Zhu, Y. (eds) Internal Migration in the Countries of Asia. Springer, Cham. https://doi.org/10.1007/978-3-030-44010-7_7

The result of stimulating the economy in this manner led to a positive feedback loop in the economic system. This can be summarized as follows:

Stimulus of collective aspirations → Production expansion → Household income growth → Household consumption expansion → Production further expansion → More household income growth → Savings increase → Total investment expansion.

Although the outcomes of the industrial development policy were highly successful in driving economic growth and elevating the average income of the Japanese population to levels comparable to Western countries, early development in Japan overlooked environmental management, leading to adverse impacts on the environment and industrial workers. However, these issues were subsequently addressed, resulting in rapid improvements in both air and water quality, as depicted in Figures 2.21 and 2.22.

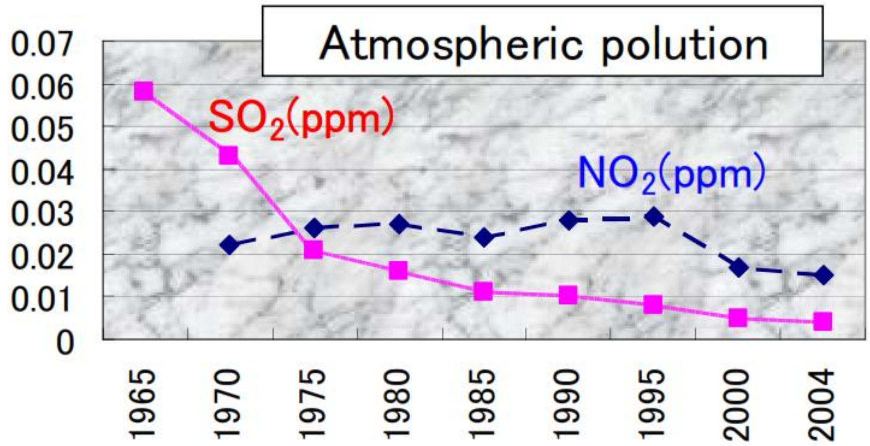


Figure 2.21: Air Pollution in Japan.

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

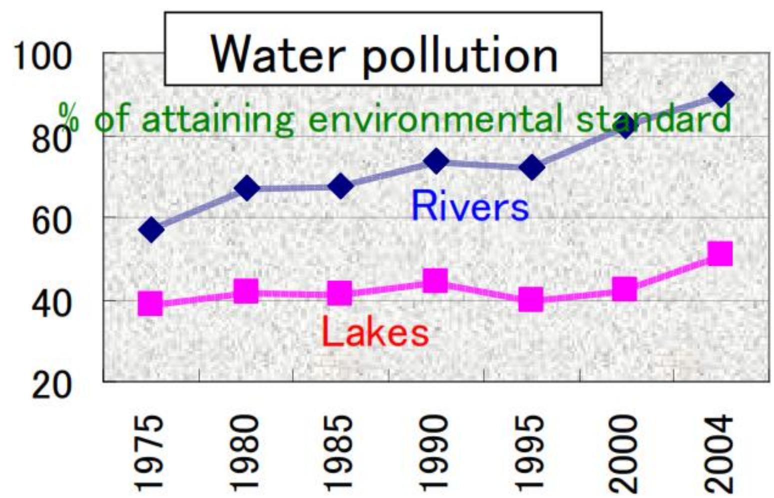


Figure 2.22: Water Pollution in Japan

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

(3) Economic Stagnation Era (1970 – 1990)

Despite Japan's rapid economic growth in the post-World War II era, during which it became a model for development worldwide, the Japanese economy entered a period of stagnation in the 1970s and 1980s. In the early 1970s, despite global oil price shocks occurring twice, Japan's economy remained resilient, thanks to cooperation between the government and the private sector to mitigate the impacts.

Efforts were made to enhance production efficiency and develop energy-efficient products. However, the economic slowdown occurred during the 1980s. A significant event contributing to this slowdown was the Plaza Accord agreement, in which the Japanese government agreed to the conditions set by the United States to address the US trade deficit with Japan. As Japan had been running a substantial trade surplus with the US (largely due to its ability to export a significant amount of goods), the Japanese government agreed to strengthen the yen (in comparison to the US dollar) and adjust its internal monetary policy to maintain trade balance.

The consequence of this agreement was that the Bank of Japan increased the domestic money supply using a mechanism called "window guidance." However, due to the economic situation, the production capacity couldn't be significantly expanded, making it difficult to absorb the increased money supply into investments for increasing production capacity. This led to excess liquidity flowing into the real estate and stock markets, resulting in a bubble phenomenon.

When the bubble burst, it caused a rapid decline in asset prices and ultimately led to the economic slowdown of the entire system. Additionally, Japan faced challenges related to the structure of its economy, including lifetime employment practices and a lack of development and competitiveness in non-tradable sectors, particularly domestic services. These sectors were protected by trade policies and did not receive sufficient support (as window guidance policies mainly focused on supporting export industries), causing slow adjustments and contributing to the economic slowdown that began in the 1980s.

(4) Low Economic Growth Era (1990-Present)

The prolonged economic stagnation in Japan has had severe and lasting consequences, continuing to affect the country to this day. The Japanese government has attempted to address these issues by stimulating the economy through fiscal expansion, which involves increasing government spending by accumulating public debt. However, these efforts have not significantly contributed to the economic recovery and growth. Furthermore, they have led to a rapid increase in public debt, making Japan the country with the highest level of public debt in the world.

In addition to these challenges, Japan has faced issues such as low consumer price inflation and deflation. In response, the Japanese government turned to monetary policy, using monetary expansion to stimulate the economy. The Bank of Japan set inflation targets to boost economic growth.

The economic transformation in Japan over the years has demonstrated several noteworthy aspects, including the expansion of the economy, the development of private sector competitiveness, and the improvement of the population's quality of life in a relatively short period. It also serves as a case study of an economy experiencing prolonged economic stagnation over several decades, leading to deflation and the accumulation of public debt, which currently ranks as the highest in the world.

Period	Average Annual Growth Rate
1958-60	8.8%
1961-65	9.2%
1966-70	11.1%
1971-75	4.5%
1976-80	4.4%
1981-85	3.3%
1983-90	4.9%
1991-95	1.5%
1996-2000	1.0%
2001-05	1.4%

Figure 2.23: Economic Growth Rate of Japan from 1956 to 2005

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

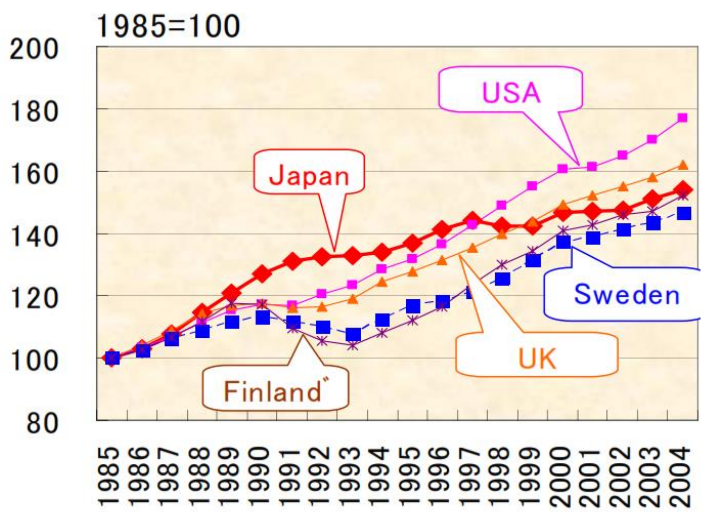


Figure 2.24: Comparison of Gross Domestic Product Index of Japan with the United States, the United Kingdom, Finland, and Sweden

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

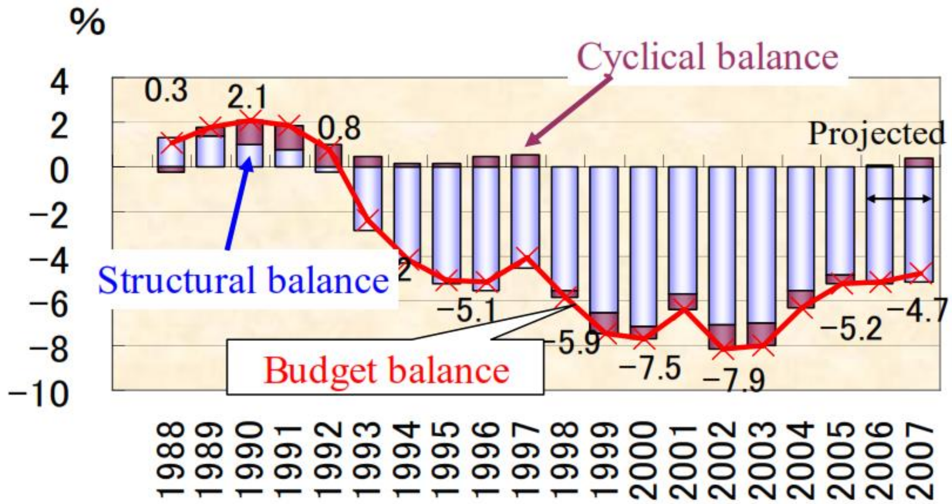


Figure 2.25: Continuous Fiscal Deficit Trend of the Japanese Government

Source: Shigeru, O.T. (2007). Post-war development of the Japanese economy, Lecture Note for Students in the EDP&M Program, GSID - Nagoya University.

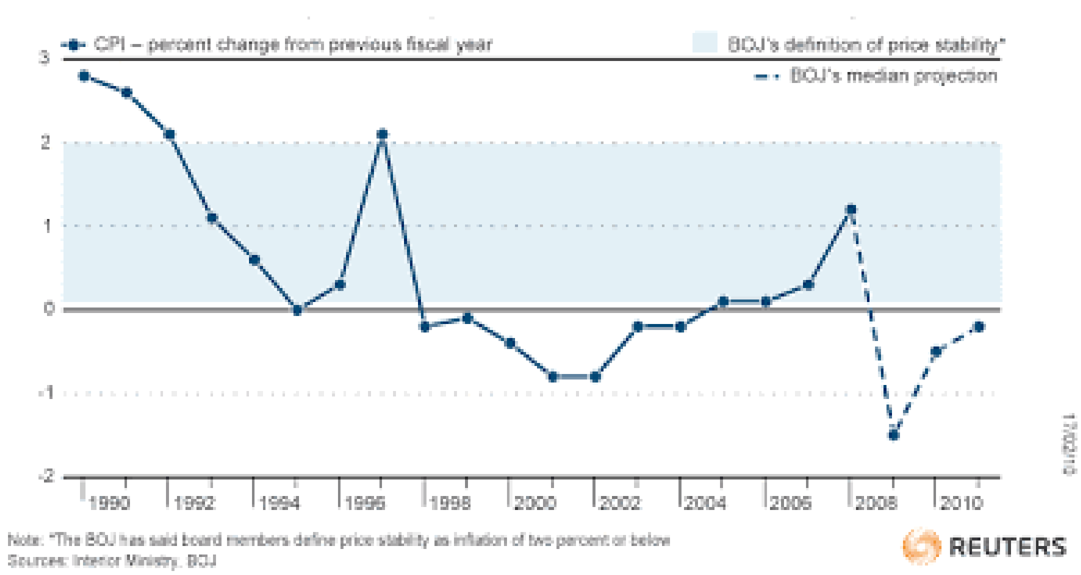


Figure 2.33: Continuous Decline in Consumer Price Index in Japan

Source: Bank of Japan and Reuters

2.3 Dr. Osamu Shimomura's Legacy and the Postwar Japanese Economy

<u>Economics of Shimomura</u>

Dr. Osamu Shimomura is a well-known figure in Japan for being the first economist to discover that Japan could experience rapid economic growth in the 1960s. He proposed that the Japanese government should pursue an expansive fiscal and relaxed monetary policy to achieve higher economic growth. He played a significant role as a private advisor to Prime Minister Hayato Ikeda and was instrumental in formulating policies for the National Income Doubling Plan during the years 2503-2513 (1960-1970). These policies successfully propelled Japan's economy to rapid growth, creating a sense among the population that they were speeding down a new economic expressway.

Dr. Shimomura's Perspective and Policies:

Dr. Shimomura aimed to restore confidence among the Japanese who had lost it due to World War II. The population made concerted efforts to drive economic expansion, as if they were participating in an "economic Olympics." His view, theory, and policies sought to align Japan's economy with the economies of Western nations.

After the first oil crisis in 2516 (1973), Dr. Shimomura quickly revised his outlook on Japan's economy. He affirmed that the era of high growth had come to an end and that Japan's economy would shift toward "zero growth" or very low growth. He believed that economic participants, including consumers, labor unions, managers, banks, and the government, should practice prudent spending and discipline themselves in the era of "zero growth." He argued that laissez-faire mechanisms would not lead to economic stability and balance.

Dr. Shimomura emphasized the importance of discipline in all economic sectors, considering the overall welfare and practicing self-restraint in the era of "zero growth." Discipline and ethics should be central issues in this period of transition from high growth to "zero growth." Sacrifice and mutual sympathy among all sectors of Japan were essential.

Current Economic Situation:

Currently, Japan's overall economy is not on the right path. The fundamental issue is the lack of a unified vision for the economy and organizations. Regrettably, economic representatives have ignored Dr. Shimomura's warnings, leading to severe economic imbalances. Since Dr. Shimomura's passing in 1989 (2532 B.E.), more than a quarter of a century has passed, a period marked by economic instability and hardship. This situation should be reevaluated, taking into account Dr. Shimomura's concept of "zero growth."

Figure 2.34: Dr. Osamu Shimomura during an NHK Television Interview

Source: NHK A portrait of Postwar Japan Part1, Economic Miracle Shimomura's Theory -- https://www.youtube.com/watch?v=mKN7ya6Dq7E&t=1897s

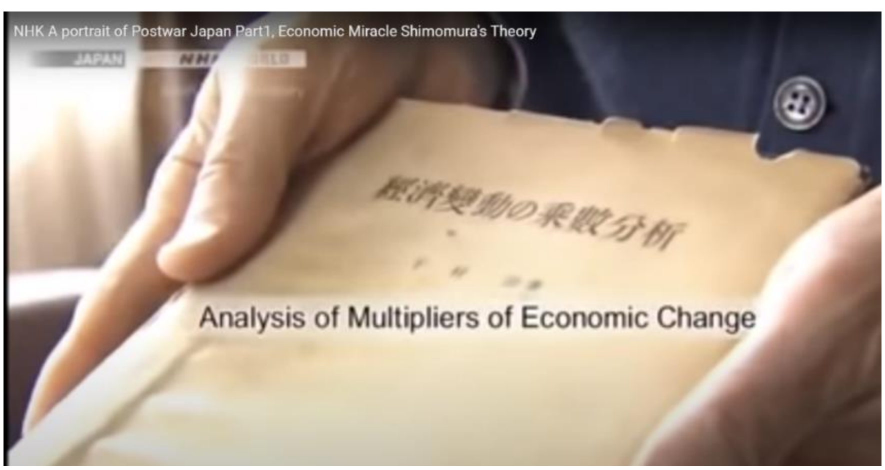


Figure 2.35: Dr. Osamu Shimomura's doctoral dissertation

Source: NHK A portrait of Postwar Japan Part1, Economic Miracle Shimomura's Theory -- https://www.youtube.com/watch?v=mKN7ya6Dq7E&t=1897s

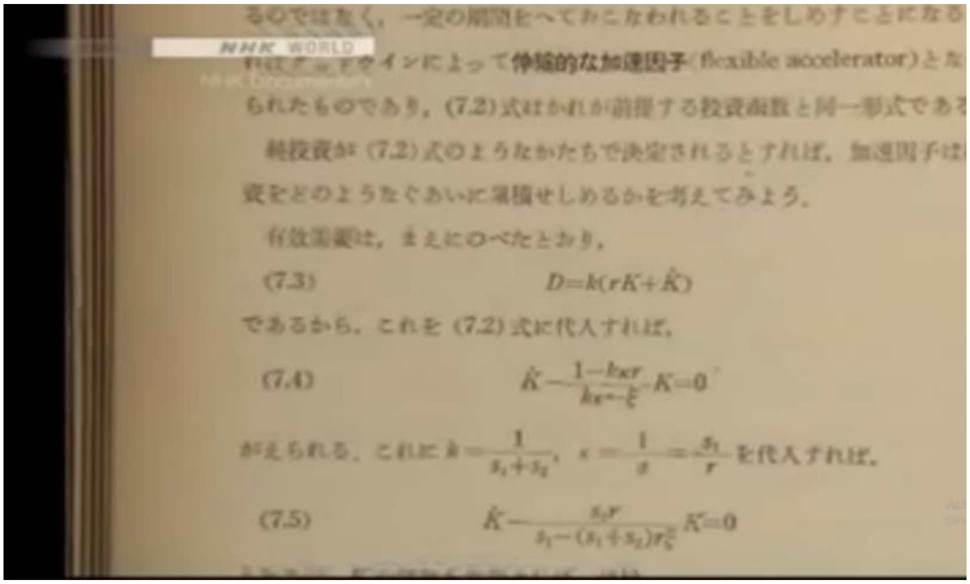


Figure 2.36: Key Portion of the Dissertation Showing the Capital Growth Equation

Source: NHK A portrait of Postwar Japan Part1, Economic Miracle Shimomura's Theory -- https://www.youtube.com/watch?v=mKN7ya6Dq7E&t=1897s

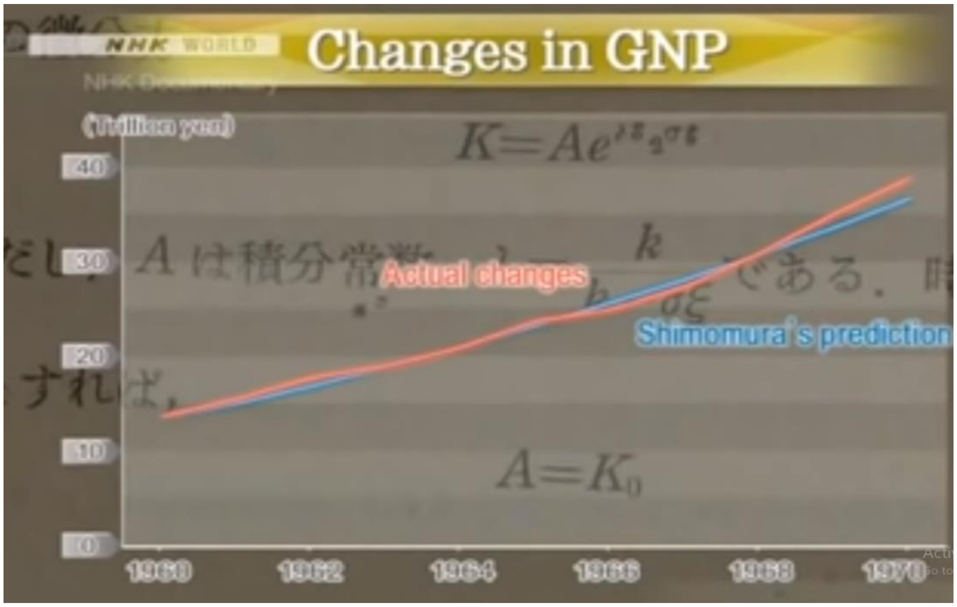


Figure 2.37: A Comparison of Dr. Shimomura's Predictions with Actual GDP Values during the Period 1960-1970

Source: NHK A portrait of Postwar Japan Part1, Economic Miracle Shimomura's Theory -- https://www.youtube.com/watch?v=mKN7ya6Dq7E&t=1897s

Box 2.1: Summary of Dr. Osamu Shimomura

- Dr. Osamu Shimomura is one of the most eminent economists in Japan. He entered the Ministry of Finance and played a crucial role in actualizing the High-Growth era from the late 1950s to the early 70s.
- The Doubling Income Plan, which is issued by the Ikeda cabinet, originates from him.
- It should be noted that while most economists held a pessimistic view of the future, Shimomura is brave and foresighted.
- Shimomura's theory is not merely one of the pioneer works in macroeconomics, but also suits the economic conditions of Japan. Shimomura extends the principle of effective demand, which means that his theory includes the effects of capital accumulation on production capacity.
- While one may argue that Harrod (1939) and Domar (1946) have already achieved that, Shimomura's theory centers policy recommendations for sustaining high economic growth against the productivity growth that would cause excess supply in the market.
- Succinctly, Shimomura is a Keynesian who believes in the vigor in its private sector but recognizes that the Japanese economy urgently needs the government's auxiliary macroeconomic policies.

Source: https://www.goodreads.com/book/show/35470799-dr-osamu-shimomura-s-legacy-and-the-postwar-japanese-economy

Dr. Shimomura's Career Path

Dr. Shimomura comes from a distinguished family with a strong commitment to serving society and the nation. He was a person of contentment, a unique economist with his own perspective, a rational thinker with a high level of reasoning, and he enjoyed engaging in debates with other economists. He pursued his economics studies at the University of Tokyo (Tokyo Imperial University) during a period when Japan was experiencing the Great Depression, which led him to believe that economics could help people facing economic hardships.

However, the Marxist economic teachings prevalent at the universities at the time made Dr. Shimomura realize that economics alone could not rescue a severely deteriorating economy. After completing his studies, many expected him to pursue higher education and an academic career. Nevertheless, in 1934, he chose to work for the Ministry of Finance. He was later sent to New York for training at the Ministry of Finance and had his first encounter with John Maynard Keynes' "The General Theory." At that time, Dr. Shimomura faced challenges in understanding Keynes' work. Still, reading Keynes' writings was a turning point in his understanding of economics.

It should be noted that the concept of Effective Demand and the multiplier effect were crucial foundations of Dr. Shimomura's economic theory. During Japan's controlled economy for the war effort, he made decisions regarding wage and salary controls for labor and private company service providers. The Japanese government employed strict income policies to control inflation. However, the experiences during this period made Dr. Shimomura realize that a centrally controlled economy did not work well.

After the war, the aggregate demand in Japan exceeded the aggregate supply. In his role as a government official, he had to deal with high inflation. His economic policy did not aim to suppress aggregate demand but to increase aggregate supply. His ideas for economic expansion led to significant development in Japan in the 1960s. Although he was a government official, he believed in the importance of free activities conducted by private-sector entrepreneurs.

In 1951, his research work laid the foundation for his theory on fluctuations and economic growth. This theory, developed further in his dissertation, became the basis of the Shimomura theory, making him well-known as an economic expert in Japan. In 1953, he was appointed to the Bank of Japan's Policy Board as a representative from the Ministry of Finance. In 1958, as an economist in the Ministry of Finance, he published an influential article that raised awareness about economic growth in Japan. Dr. Shimomura was aware that the aggregate demand exceeded the aggregate supply in Japan after the war, but he also understood that the aggregate supply had the potential to surpass the aggregate demand. This realization marked a significant turning point in Japan's economic history and led to the creation of Prime Minister Ikeda's National Income Doubling Plan in 1960, elevating Japan from a middle-income country to a high-income one within just seven years (1960-1967).

In 1953, he was appointed to the Policy Board of the Japan Development Bank (JDB) and, in 1959, became the first director of the Research Institute for Capital Formation (RICF) under the JDB. Throughout his career, Dr. Shimomura worked in the fields of economic analysis and forecasting. Japanese entrepreneurs held him in high regard for his unique perspective. For instance, Professor H. Uzawa stated in his book "Japanese Challenge" (1969) that Dr. Shimomura had the potential to win the Nobel Prize in Economics in the 1970s.

Throughout his life, Dr. Shimomura wrote and published over ten books and numerous papers, including those for publication in economics journals, translated lectures, conversations, and interviews with economists and journalists. In total, there are approximately 1,150 such documents.

Dr. Shimomura left a lasting legacy in the field of economics, contributing significantly to Japan's post-war economic growth and development.

Shimomura Theory

Dr. Shimomura had the ability to understand complex economic situations and accurately predict economic trends without relying on mainstream economic theories or mathematical models. He primarily used a slide rule as his main tool for calculations and developed his own theory of economic dynamics. His economic theory helped him confidently forecast Japan's economy during various time periods with remarkable accuracy.

Looking back to the post-war era, Dr. Shimomura had the responsibility of designing inflation control policies for the Ministry of Finance and serving on the Economic Stabilization Board. Due to the complexity of his duties, he fell seriously ill with a pulmonary disease, which required an extended period of hospitalization. Dr. Shimomura took advantage of this time to work on his doctoral thesis, which was eventually published in the Ministry of Finance's journal in 1951.

In 1952, Dr. Shimomura published his doctoral thesis titled "Economic Fluctuation and Multiplier Analysis" and received his doctoral degree in 1956. During this time, he mentioned that Keynesian theory was effective in addressing real-world problems but needed to be developed further to incorporate dynamics. Dr. Shimomura stated, "While working at the Ministry of Finance and serving on the Economic Stabilization Board for several years, I found that Keynesian theory helped me analyze real economic trends and find correct solutions to problems. At the same time, I realized that Keynesian theory was not complete."

The significance of his thesis on economic fluctuation and multiplier analysis will be discussed in the following sections.

- Company profits fluctuate due to changes in demand and aggregate consumption. Company investments change in response to these profit fluctuations, resulting in what is called investment, which leads to the business cycle in the national economy. Dr. Shimomura concluded, based on mathematical model parameters and actual economic data, that Japan's economy would enter a certain investment cycle lasting approximately 9 years.
- Investment to respond to changes when profits fluctuate. When Dr. Shimomura considered the feedback system in his model, he concluded that Japan's economy would be relatively stable, despite some fluctuations.
- Independent company investments are a driving factor for economic growth. These investments are not influenced by economic growth or downturns because entrepreneurs, who bear the risk, make long-term investment decisions. Independent investments are rooted in Schumpeter's model, which emphasizes innovation and technology change. In Dr. Shimomura's model, independent investments are a function of time.
- Dr. Shimomura estimated that the output-capital ratio was 1.0 using data from the Cabinet Statistics Bureau in 1935. This ratio is necessary to estimate the potential economic growth rate in the 1960s, relating national income to industrial assets.

Dr. Shimomura's model indicates that a capital-driven economy is certain, and investment to respond leads to a certain business cycle. He had faith in market mechanisms and believed that innovation would drive independent investments. He was also a developer of growth theory rooted in the idea that innovation fosters economic growth. Schumpeter developed innovation theory to comprehensively explain business cycles, and Dr. Shimomura was the first economist to clearly relate independent investments to economic growth.

The main factor enabling Japan's economy to achieve the National Income Doubling Plan proposed by Prime Minister Ikeda in 1960 was the sustained maintenance of aggregate investment (I). According to Dr. Shimomura's theory, this would result in a 1:1 increase in GDP, and Japan achieved this goal in 1967, three years ahead of schedule.

Dr. Shimomura developed a dynamic Keynesian theory, following R.F. Harrod and P.A. Samuelson. However, his model differs from Harrod's by emphasizing the certainty of a capital-driven economic system. While Dr.

Shimomura's model garnered attention in the field of economics, he wasn't focused on further mathematical model development. Instead, he was interested in solving real-world economic problems, particularly economic forecasting for entrepreneurs. Japan's economy experienced rapid growth in the late 1950s, a remarkable event in its own right

Analysis of the Impact of Dr. Shimomura's Theory on the Structure and Growth of the Japanese Economy

Dr. Shimomura played a crucial role in demonstrating the true potential of Japan's economic growth at a high rate. He emphasized the importance of private sector investment, particularly in increasing the number of machinery, buildings, and other factors in expanding production capacity (investment-led growth).

These principles had a significant effect on the rapid growth of Japan's Gross Domestic Product (GDP) and its transition to a high-income level after the initiation of the economic development plan, which Dr. Shimomura helped draft, in just seven years. The results of these policies are also reflected in the research findings of Fukao et al. (2020), which employed Growth Accounting to analyze the economic development processes in Japan from 1874 to 2015. Their analysis clearly demonstrates that continuous investment is the most significant factor contributing to Japan's economic prosperity and growth.

Box 2.2: Abstract of the research work by Fukao et al. (2020)

After the Meiji Restoration of 1868, Japan modernized its institutions and economic growth gradually picked up. Growth accelerated especially during the so-called high-speed growth era from 1955 to 1970, when Japan rapidly caught up with Western economies. The long-term sustained high-speed growth recorded during this period was unprecedented, not only in Japan, but worldwide. Using newly constructed Hitotsubashi estimates of Japan’s historical gross domestic product (GDP) statistics and a growth accounting framework, we analyze the sources of Japan’s economic growth through a historical perspective covering a longer period than other studies and explore why Japan was not able to accomplish such high-speed growth from 1885 to 1955. Since the mid-1960s the primary sector accounted for a large share of economic activity, we use a two-sector model in which the economy overall is divided into the primary sector and the non-primary sector. Our results suggest that TFP growth and capital accumulation in the non-primary sector played a major role in achieving high-speed economic growth. From this perspective, the fact that the capital stock per worker did not grow substantially before World War II is one of the key reasons why Japan did not experience high-speed growth during this period.

Source: Fukao et al. (2020).

When considering the preliminary data presented in the article, Figure 2.97 shows a continuous increase in average income per capita in Japan, corresponding to the rapid growth during the period from 1955 to 1970. This aligns with the content detailed in sections 2.2 and 2.3. During that period, Japan's average income per capita increased until it reached a level similar to that of the United Kingdom. However, there was subsequent reduced growth, with income per capita falling below that of the United Kingdom after 1990, as discussed in the economic stagnation issue presented in section 2.2.

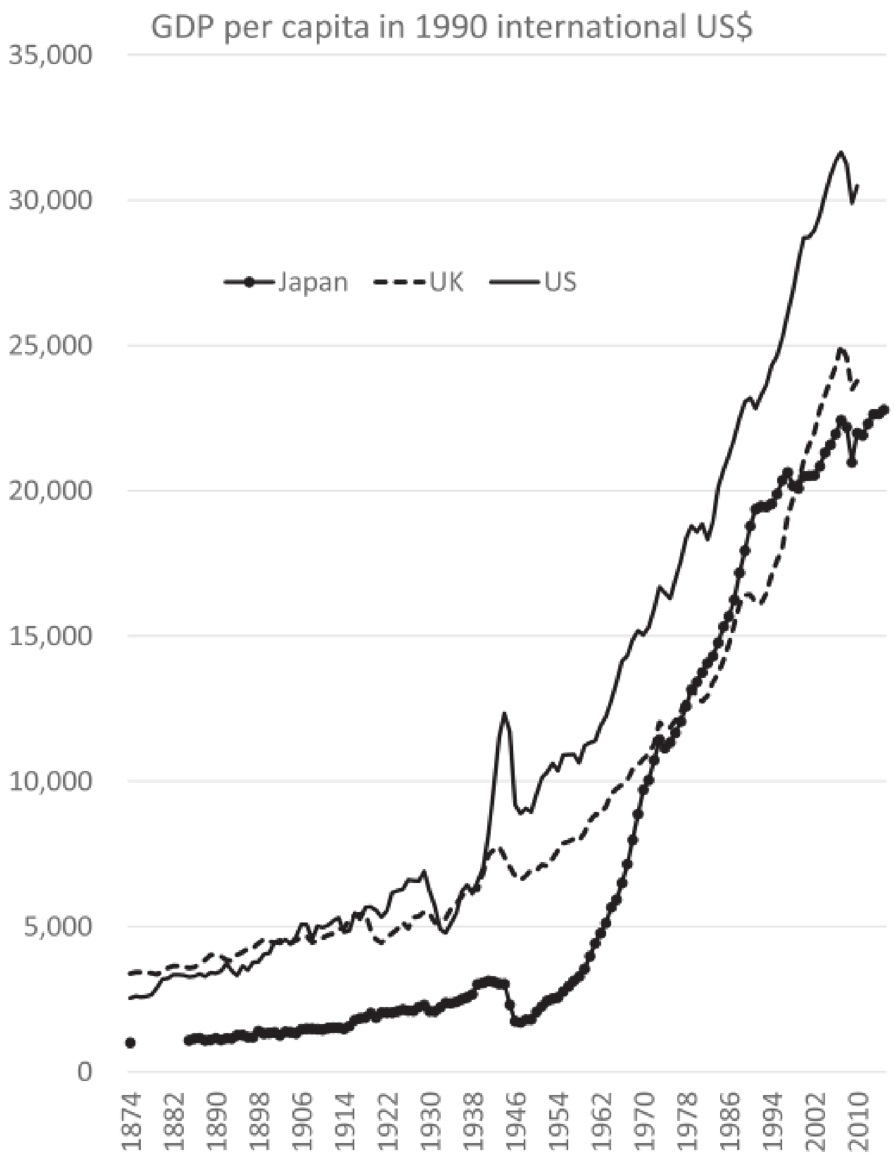


Figure 2.38: Average Income per Capita in Japan

Source: Fukao et al. (2020)

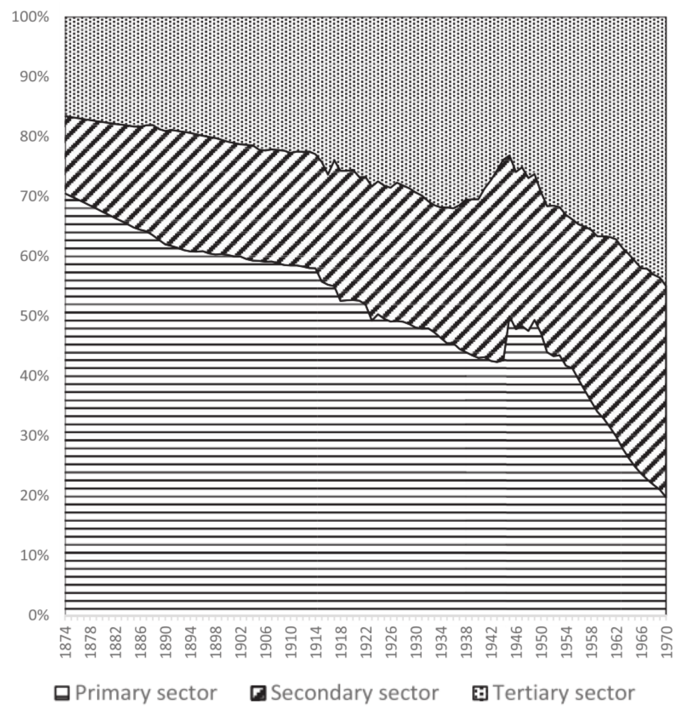


Figure 2.39: Labor Force Composition by Production Sector

Source: Fukao et al. (2020)

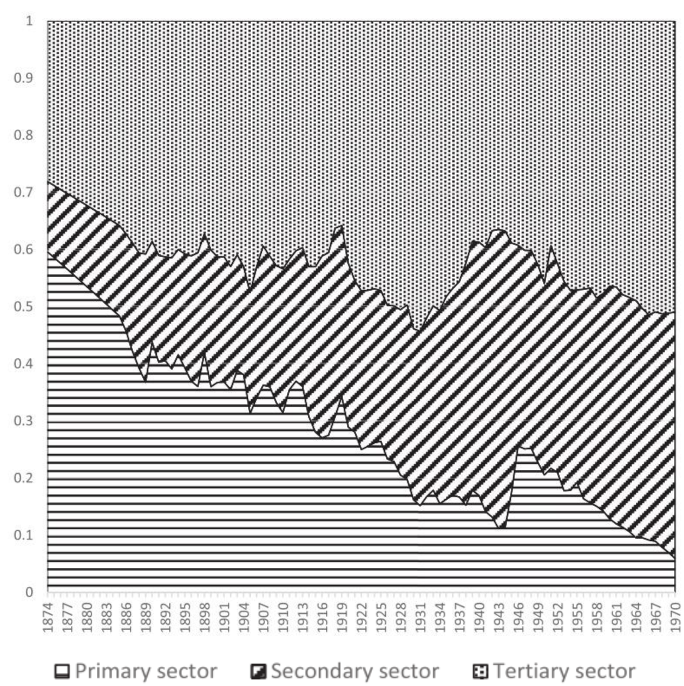


Figure 2.40: Proportions of Value Added by Production Sector

Source: Fukao et al. (2020).

The change in average income per capita is in line with the changes in the structure of domestic production within Japan. Labor has shifted towards industries with high value-added (Figure 2.39), corresponding to the proportions of value-added generated by industrial sectors (Figure 2.40). This change is a result of the government's industrial policy aimed at promoting rapid growth of targeted industries. The Japanese government, through coordination between the Ministry of International Trade and Industry, the Ministry of Finance, and the Bank of Japan, selected target industries and implemented various measures to facilitate and protect the rapid growth of these industries. This strategy also led to significant export capacity expansion, making Japan a leader in these markets.

	Labor Productivity Growth (%)	Contribution of Increases in Capital Stock per Worker (%)	TFP Growth (%)	Increase in the Number of Workers (%)	Increase in Real Value Added (%)
	a = b + c	b	c	d	e = a + d
1885–1899	1.74	0.27	1.46	1.41	3.14
1899–1913	1.58	0.79	0.79	0.87	2.44
1913–1926	2.53	0.59	1.94	2.17	4.70
1926–1940	2.67	0.70	1.97	1.82	4.49
1940–1945	0.48	−0.03	0.51	−4.79	−4.31
1945–1950	−5.87	−1.33	−4.53	5.34	−0.53
1950–1955	2.85	0.50	2.35	4.26	7.11
1955–1960	4.48	1.22	3.27	4.86	9.34
1960–1965	6.01	2.94	3.07	4.04	10.05
1965–1970	9.29	3.18	6.11	3.19	12.48
Meiji: 1885–1913	1.66	0.53	1.13	1.14	2.79
Taisho: 1913–1926	2.53	0.59	1.94	2.17	4.70
Prewar Showa: 1926–1940	2.67	0.70	1.97	1.82	4.49
HSG: 1955–1970	6.60	2.45	4.15	4.03	10.62

Figure 2.41: Growth Accounting Detailed Results (Targeted Industries)

Source: Fukao et al. (2020)

	Labor Productivity Growth (%)	Contribution of Increases in Capital Stock per Worker (%)	Contribution of Increases in Arable Land per Worker (%)	TFP Growth (%)	Increase in the Number of Workers (%)	Increase in Real Value Added (%)
	a = b + c + d	b	c	d	e	f = a + e
1885–1899	0.82	0.07	0.15	0.60	0.05	0.88
1899–1913	1.62	0.14	0.17	1.30	0.18	1.80
1913–1926	1.47	0.32	0.29	0.86	−0.59	0.88
1926–1940	0.50	0.24	0.06	0.21	0.08	0.58
1940–1945	−7.52	−0.13	−0.22	−7.17	0.80	−6.71
1945–1950	0.97	−0.12	−0.10	1.18	3.11	4.08
1950–1955	5.54	0.45	0.03	5.07	−0.51	5.02
1955–1960	5.26	0.81	0.72	3.73	−2.34	2.91
1960–1965	4.16	1.47	0.94	1.75	−3.83	0.33
1965–1970	0.49	2.26	0.44	−2.22	−2.78	−2.29
Meiji: 1885–1913	1.22	0.11	0.16	0.95	0.11	1.34
Taisho: 1913–1926	1.47	0.32	0.29	0.86	−0.59	0.88
Prewar Showa: 1926–1940	0.50	0.24	0.06	0.21	0.08	0.58
HSG: 1955–1970	3.30	1.51	0.70	1.09	−2.98	0.32

Figure 2.42: Growth Accounting Detailed Results (Non-targeted Industries)

Source: Fukao et al. (2020)

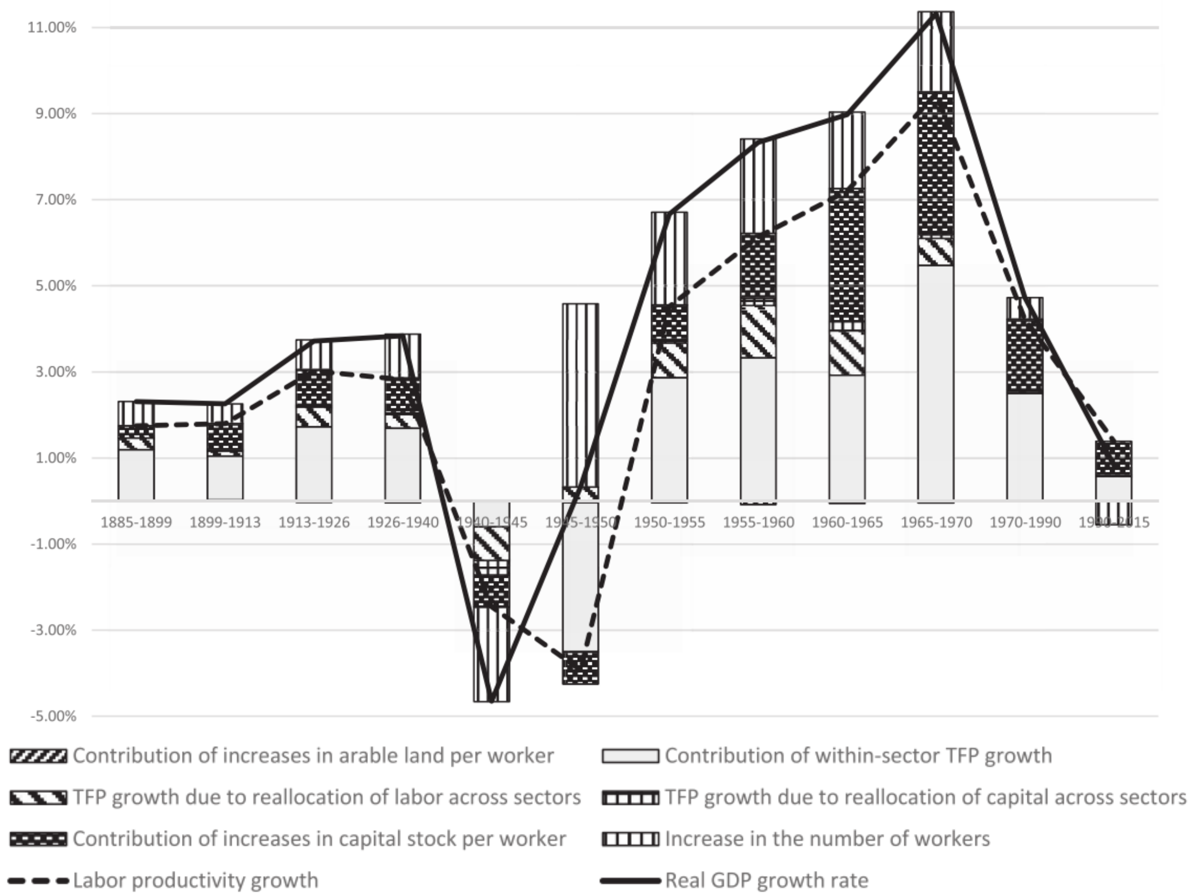


Figure 2.43: Growth Accounting Detailed Results (All Sectors)

Source: Fukao et al. (2020)

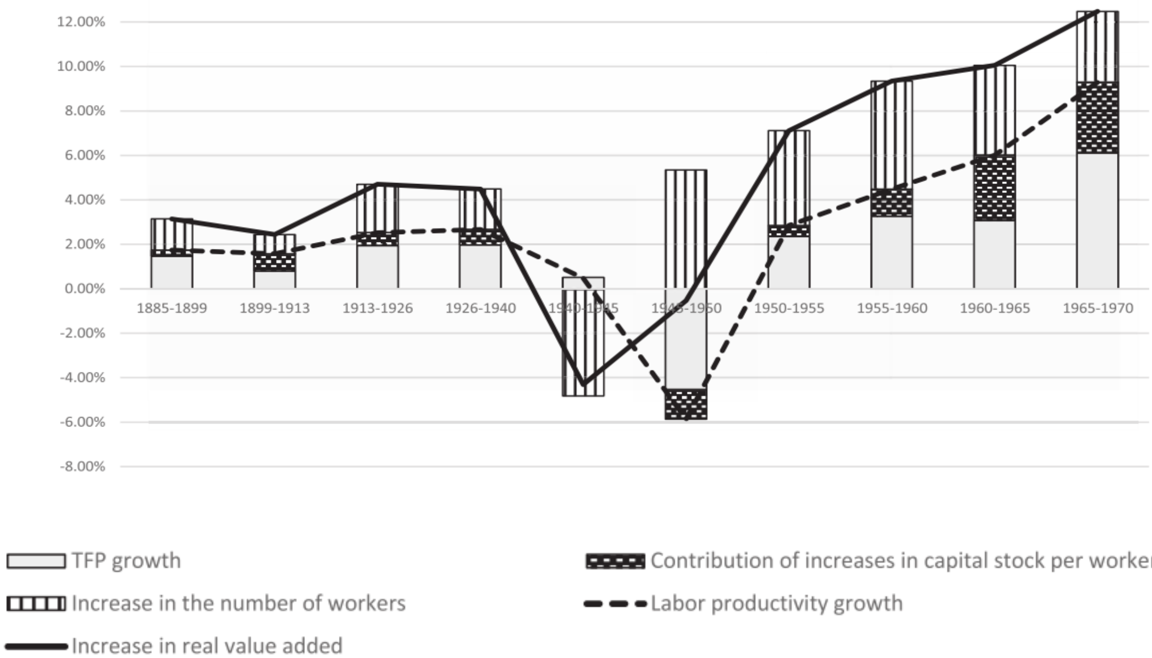


Figure 2.44: Growth Accounting Detailed Results (Targeted Industries)

Source: Fukao et al. (2020)

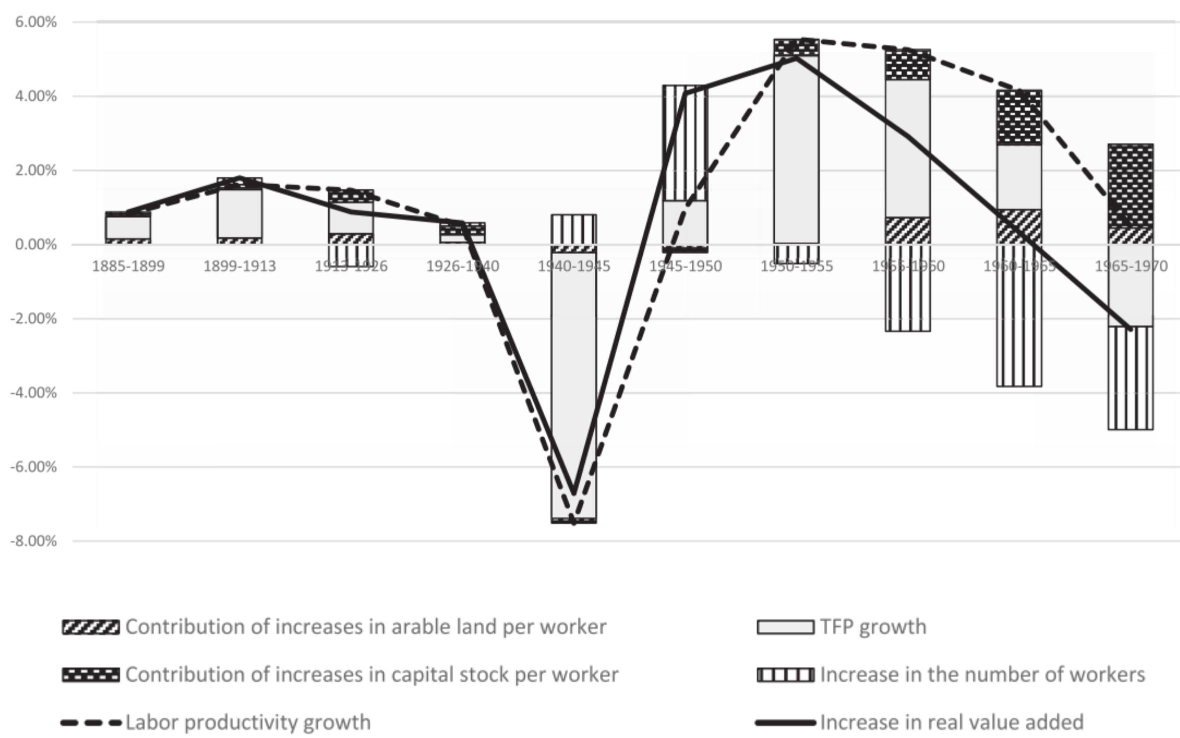


Figure 2.45: Growth Accounting Detailed Results (Non-targeted Industries)

Source: Fukao et al. (2020)

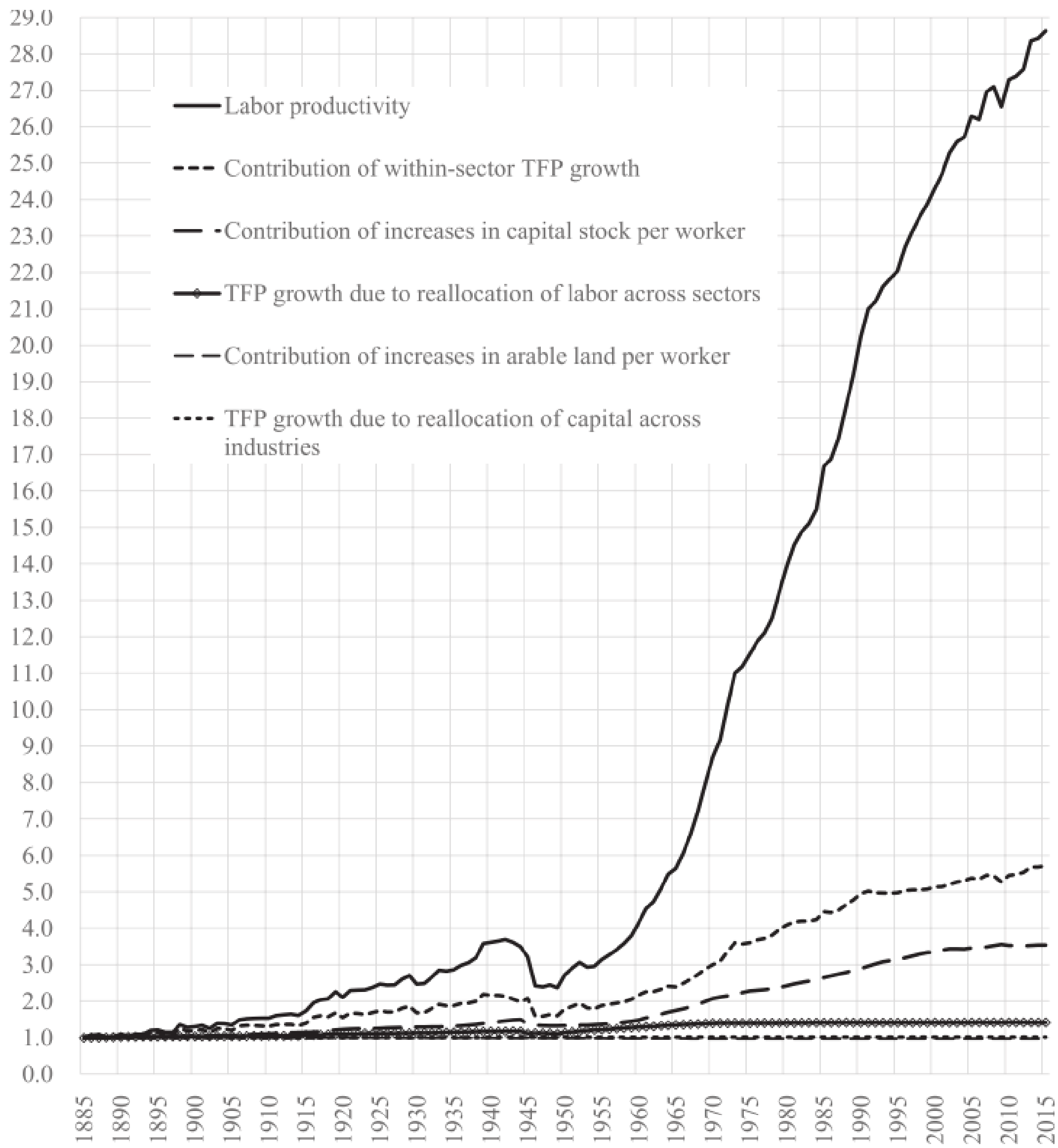


Figure 2.46: Detailed Impact Separation of Growth Accounting, Cumulative Impact over the Period 1885-2015

Source: Fukao et al. (2020).

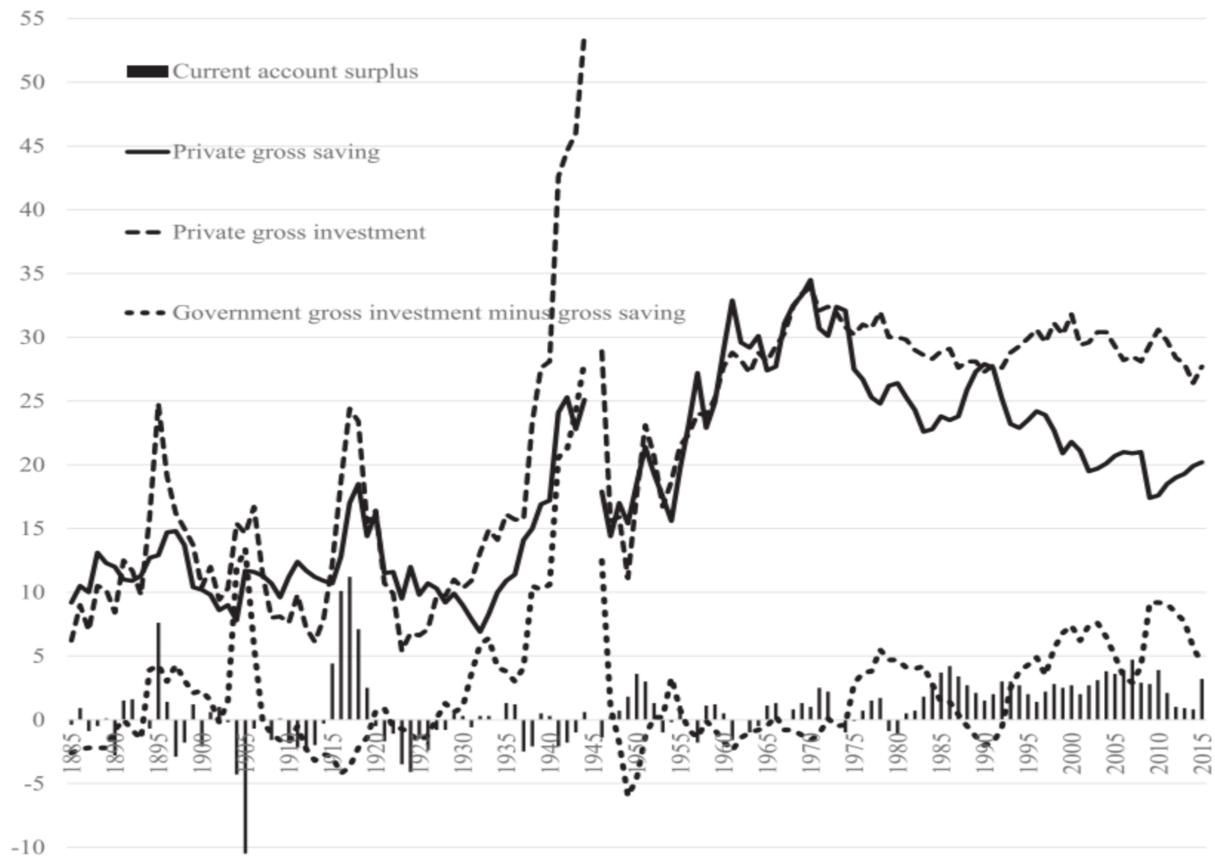


Figure 2.47: Proportion of Savings and Investment to GDP

Source: Fukao et al. (2020)

The results of the detailed breakdown of factors contributing to Japan's economic growth are clearly shown in Figures 2.41-2.46. Targeted industrial sectors received continuous support and experienced consistent capability enhancement, driven by the policies planned and implemented by Dr. Osamu Shimomura under "The National Income Doubling Plan." These policies led to a continuous increase in private sector investment, resulting in a consistent rise in capital per labor and improved labor efficiency. This, in turn, contributed to higher income levels for the workforce.

These outcomes affirm the success of Dr. Osamu Shimomura's theories, particularly the concept of "investment-led growth." Key factors contributing to this achievement include high savings rates among both private households and corporations in Japan. These savings provided a crucial source of capital for annual investments, enabling the continuous expansion of investments in machinery, buildings, and production equipment in Japan from 1950 to 1970. Maintaining high savings and investment levels as a proportion of GDP served as a model for other countries such as South Korea and Singapore, which applied these principles to achieve long-term increases in their average population income.

2.4 Zaibatsu and Keiretsu: A Network Structure of Japanese Firms

The Origin of Zaibasu

In the 18th century, a group of Japanese merchants, many of whom had ancient roots, began to establish themselves economically and socially. Examples include Mitsui, Sumitomo, Kinokuniya, Yodaya, and Konoike. Despite facing some government regulations, they managed to build economic and social influence for themselves. Their family backgrounds often included land ownership, and they received financial support from the Tokugawa government.

For instance, in the case of the Mitsui group, Hachirobei Takatoshi Mitsui was the founder of Mitsui, initially engaging in the silk trade in the mid-17th century. Over time, Mitsui expanded its trade to other goods and even ventured into the rice trade, money exchange, and local credit businesses. In 1680, his son established the Echigoya company, which covered the Edo, Kyoto, and Osaka regions, becoming a crucial player in delivery services. Mitsui also began purchasing land and further expanding into agriculture.

In the case of the Sumitomo group, the Sumitomo family originally dealt in herbal medicine and iron products in Kyoto. During the early Tokugawa period, Sumitomo started copper mining and trading in Osaka. After adopting new Western techniques for refining copper, Sumitomo became the world's largest producer of refined copper. In 1783, Sumitomo became the representative of the Tokugawa government in the Kansai region. Sumitomo expanded its industrial production to textiles, clothing, sugar, and pharmaceuticals. Additionally, Sumitomo ventured into money exchange.

These influential middle-class figures in finance and industrial development during Japan's modernization era faced significant challenges. They played a crucial role in shaping Japan's economy and society, ultimately becoming known as "political merchants" (Seisho).

The political merchants that developed into major Zaibatsu can be categorized into three groups:

1. Mitsui and Yasuda were licensed to handle national tax revenues.
2. Okura and Fujita were trading companies supplying goods and services.
3. Mitsubishi operated the shipping and logistics business with government subsidies

Box 2.3: Details of Zaibatsu Groups

	Origins	Growth and Relations with the Government
*Mitsui**	Dates back to 1673; "*political merchants*" who provided financial services to the *Tokugawa* regime since the late 17th century.	Historically close ties to various governments. Growth and diversification through acquisitions, in part through establishment of new business, in part through government privatization and contracts.
*Mitsubishi**	Founded by a former Samurai after the *Meiji* Restoration.	Initially investment in shipping enjoyed government protection, subsidies, loans etc. Subsequent growth and diversification patterns broadly similar to Mitsui's.
*Sumitomo**	Dates back to the late 16th century with ties to the *Tokugawa* regime.	Diversified from mining into trading, finance, and industry. Again, diversification and growth through both acquisitions and through the establishment a new business, with government support.
*Yasuda**	"*Political merchants*" from the *Meiji* Restoration period. Mainly provided financial services (including the establishment of the third national bank in 1876).	Less diversified than the other large groups more focused on banking and finance. Again, both acquisitions and new business as mechanism of growth.
Asano	Around 1870, no previous political ties.	Initial fortune out of various investments. Growth through cooperation with separate financial institutions.
Fujita	Origins: supplier of good and engineering works to the new government (with contacts to major figures in the *Meiji* government).	An internal family feud led to the dissolution of this group and its reorganization as the *Kuhara zaibatsu*.
Okura	Merchant (groceries) before the Meiji restoration; converted into gun production in 1860s and then into overseas trading starting 1873.	Growth mainly through acquisitions. Despite substantial operations overseas, government contracts remained major sources of income.

Source: Grabowiecki (2006)

Zaibatsu Structure

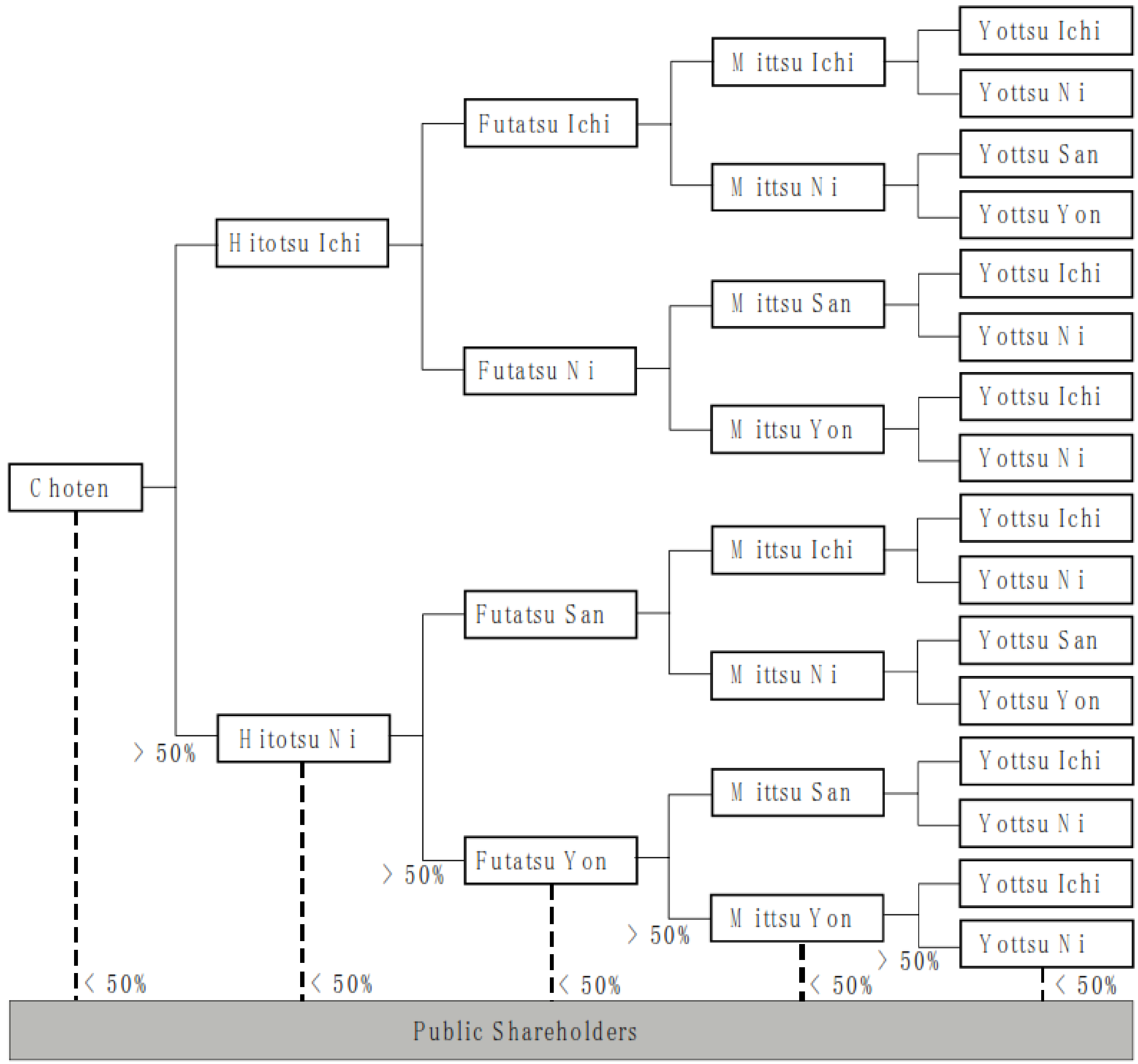


Figure 2.48: Pyramid Structure in the Expansion of Zaibatsu Business Groups

Source: Grabowiecki (2006)

This pyramid structure was described by Yoshisuke Ayukawa, the founder of Nissan, and it was applied by other Japanese business families before World War II.

During the Meiji Restoration era, the Zaibatsu Big Four (Mitsui, Sumitomo, Mitsubishi, and Yasuda) were officially established. All of them employed this pyramid structure. Additionally, each Zaibatsu group consistently canceled low-level competing companies and established new holding companies. This pyramid structure was also described by Yoshisuke Ayukawa, the founder of Nissan. This method was applied by other Japanese business families before World War II as well.

In the case of the Mitsubishi Zaibatsu group, their structure closely resembled that of Mitsui.

Generally, financial or banking companies like Sumitomo Mitsui Banking Corporation were at the top, while industrial companies were at a lower level. The Zaibatsu included banks, trading companies, insurance companies, coal mines, and department stores. The pyramid structure of Sumitomo also encompassed chemical products (1934), non-ferrous metals (1935), and electric and cable (1937) industries.

However, the Zaibatsu structure of Yasuda differed from other groups. Yasuda's bank was the largest and was established by the merger of 11 subsidiary banks in 1913, managing a total capital of 150 million yen, including:

- Mitsui Bank: 600,000 yen
- Sumitomo Bank: 500,000 yen
- Dai-Ichi Bank: 430,000 yen
- Mitsui Bank: 300,000 yen

Mitsubishi, on the other hand, had a distinctive feature compared to other groups. It was an industrial-focused Zaibatsu that emphasized heavy industry and maritime transportation. Furthermore, Mitsubishi selected high-skilled managers and executives from outside the family.

Additionally, there were other Zaibatsu groups that also focused on the industry. They primarily concentrated on industrial production and lacked the banking and financial institutions seen in the primary Zaibatsu groups. Examples include Asano, Kawasaki, Furukawa, Shibaura Manufacturing (currently Toshiba), and Hitachi, which were industrial-focused Zaibatsu leaders.

During the economic and financial expansion between 1917 and 1919, new industrial-focused Zaibatsu groups emerged, such as Nissan, Nichitsu, Nisso, and Riken.

	1937				1947			
	*14 zaibatsu**		Total companies (within Japan)		14 *zaibatsu**		Total companies (within Japan)	
Manufaturing and mining	2 039 348	25.3	8 056 601	100.0	10 440 200	100.0	22 089 231	100.0
Heavy industries	985 504	27.3	3 612 502	100.0	7 919 585	54.9	14 430 619	100.0
Metal	174 478	19.1	911 752	100.0	1 655 406	43.2	3 829 681	100.0
Machinery	385 312	29.4	1 311 471	100.0	4 302 777	56.4	7 632 409	100.0
Chemical	425 714	30.6	1 389 279	100.0	1 961 402	66.1	2 968 529	100.0

* the foutrteen *zaibatsu* are: *Mitsui*, *Mitsubishi*, *Sumitomo*, *Furukawa*, *Asano, Okura, Yasuda, Nomura*, *Ayukawa (Nissan)*, *Nitchitsu, Nisso*, *Mor*i, *Riken, Nakajima*.
Source: H. Morikawa (1992, p. 234)

Figure 2.49: Intensity of Support for the 14 Heavy Industry Zaibatsu Groups (Paid-Up Capital, Thousand Yen)

Source: Grabowiecki (2006)

A Structure of Keiretsu

Keiretsu is a crucial factor influencing economic growth, increased production, as well as technological development and improvement. This transformation has reduced the economic development gap between Japan and other developed countries. Keiretsu is a group of independently managed companies that are interconnected through various mechanisms such as cross-shareholding and interlocking directorates.

In the horizontal aspect of Keiretsu, there are structural relationships among various companies linked through cross-shareholding, internal capital procurement, and a central coordinating committee (often behind the scenes). In the vertical aspect of Keiretsu, there are centralized clusters of large companies with a multi-tiered supplier network, allowing the main companies' production processes to operate systematically.

A key characteristic that sets Japanese companies apart from those in the United States and Europe is the long-term relationships they establish with banks within the Keiretsu group. The most important factors of these relationships include the integrated roles of lenders and shareholders, the indirect role of finance, specific bank borrowing, the capital structure of companies, and the prominent role of banks in monitoring corporate operations in case of deteriorating financial performance.

Additionally, the main banks that offer comprehensive banking services include fund procurement, deposits, foreign currency exchange transactions, payments, issuance of subordinated bonds, and more. These main banks also conduct long-term audits of other borrower companies on behalf of lenders.

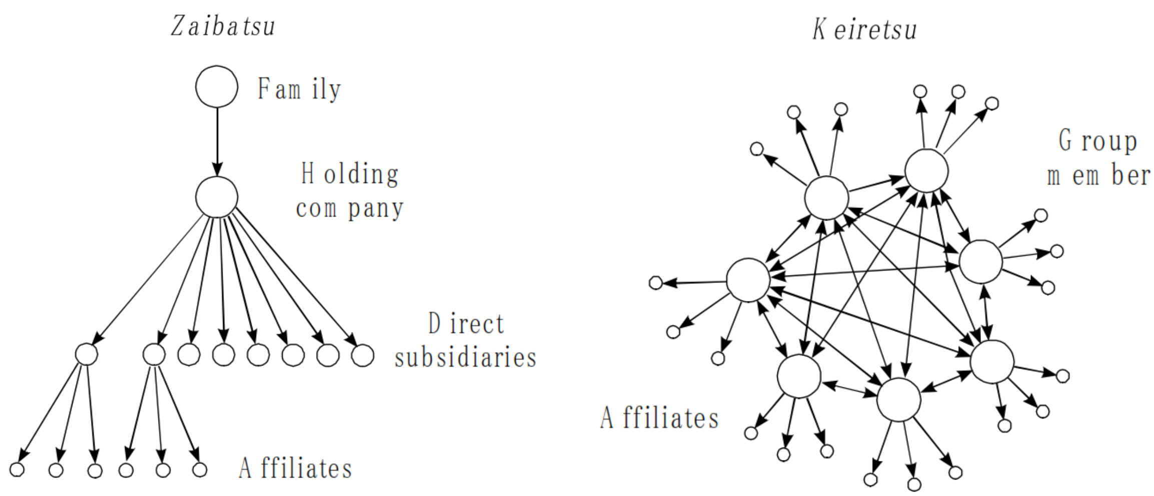


Figure 2.50: Structure of Zaibatsu and Keiretsu

Source: Grabowiecki (2006)

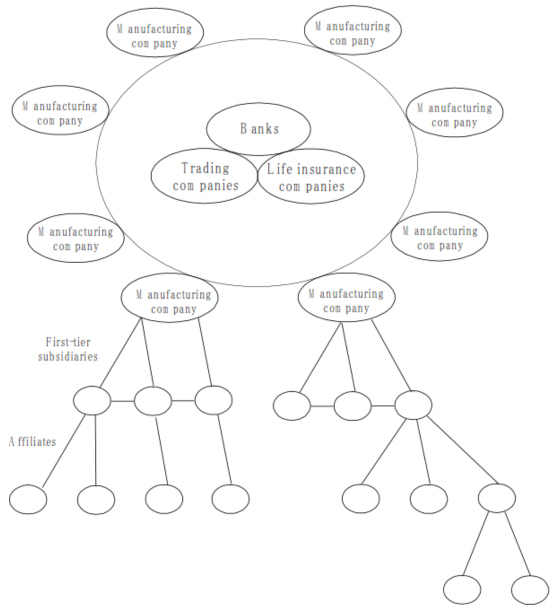


Figure 2.51: Keiretsu Structure

Source: Grabowiecki. (2006)

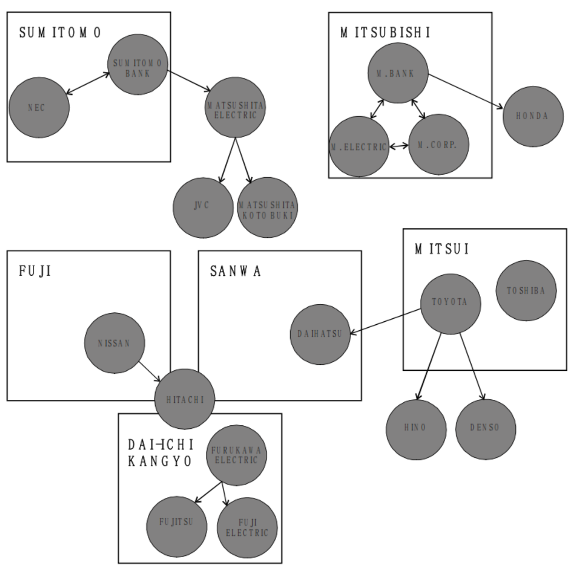


Figure 2.52: Integration of the Horizontal and Vertical Aspects of Keiretsu

Source: Grabowiecki. (2006)

Group[a]	1987	1999	2000	Change[b] 1987-2000
Mitsubishi	11.16	11.62	9.15	-18.01
Mitsui	6.35	6.95	4.78	-24.72
Sumitomo	10.95	9,43	8.46	-22.73
Sanwa	4.75	4.79	4.07	-14.31
Fuji	5.27	4.31	3.70	-29.79
Dai-Ichi Kangyo	6.99	6.32	5.87	-16.02
Cross-shareholding ratios of the six corporate groups (value basis)	28.01	20.36	16.71	-40.34
Cross-shareholding ratio of overall market (value basis)	18.4	10.6	10.2	-44.56
Intra-group cross-shareholding ratio (value basis)	12.10	9.39	7.47	-38.26

[a] Group firms as identified by Nippon Life Insurance [b] Percentage change in cross-shareholding from 1987-2000

Figure 2.53: Cross-Shareholding in Major Horizontal Keiretsu (Percentage of Total Share Value)

Source: NLI Research Institute (2001, pp. 30-1)

The structure of Zaibatsu and Keiretsu is a distinctive feature of the Japanese economy. It involves the interconnectedness of companies in the financial sector, industrial sector, transportation sector, as well as trading companies, all under the same network, leading to efficiency in production, financial management, risk management, and the exchange of beneficial information among them. Moreover, it fosters capabilities development because producers within the network do not necessarily have to focus on marketing or sales as they receive advance orders from companies within the same network. Additionally, they receive financial support from banks within the same network, reducing the burden on marketing and finance, allowing more investment in production efficiency. Furthermore, it creates linkages between large, medium-sized, and small companies, helping to distribute employment and reduce income inequality issues. It also reduces the problem of bad debts in the economy since information about the income sources of borrowing companies can be exchanged between banks and related supply chain companies.

2.5 Japan's Model of Economic Development: Relevant and Non-relevant Elements for Developing Economies

From the content presented in this section, it can be seen that Japan serves as a model for development for other developing countries. Japan's policies and development methods clearly demonstrate the use of industrialization as the main mechanism to drive higher national prosperity. This is evident from their focus on heavy industries and an emphasis on export goals for these industries, coupled with a focus on maintaining high levels of private-sector investment in the expansion of production. Furthermore, the government has created advantages for target industries through financial support (including special loans, special interest rates, and exchange rates) and legislative measures, as well as supporting labor migration from agriculture to industry. All of these policies are examples of industrial policy, which no other country has employed to achieve such high rates of economic growth in history and has subsequently become a guideline for other countries.

Based on the model of Japan's policy presented by Kimura (2009), industrial policies consist of the following components:

1. Policies affecting the vital resources for industries:
- Infrastructure development such as industrial parks, roads, ports, water sources, and energy sources.
- Management of resource linkages between industries, such as labor and raw materials.
2. Policies affecting industrial structure:
- Changes in the producer structure, setting production quantity limits, and investment-related regulations in industries.
- Determining the relationships between companies within the industry.

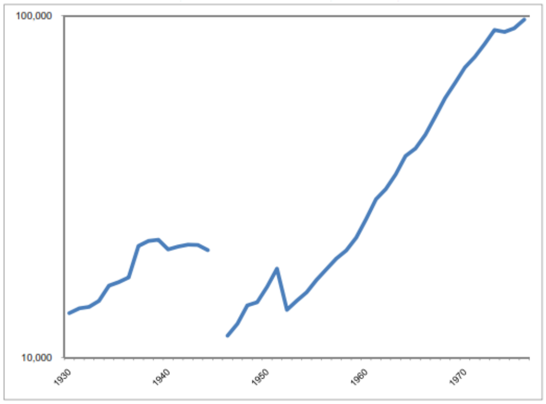


Figure 2.54: Gross National Expenditure at Constant Price, Japan, 1930-76

Source: Kimura (2009)

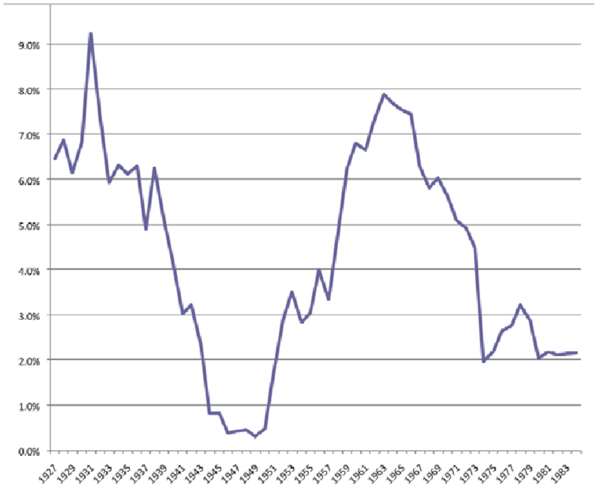


Figure 2.55: The Ratio of Customs Duties to Imports, Japan, 1927-84

Source: Kimura (2009)

The impact of these policies has resulted in changes in the economic structure, as reflected in Figures 2.54–2.58, which show the continuous increase in Gross Domestic Product (GDP) at the macro level. These policies have led to resource reallocation and a reduced share of value added in the agricultural sector. Focusing on export-oriented production has also created trade surpluses and largely balanced current accounts.

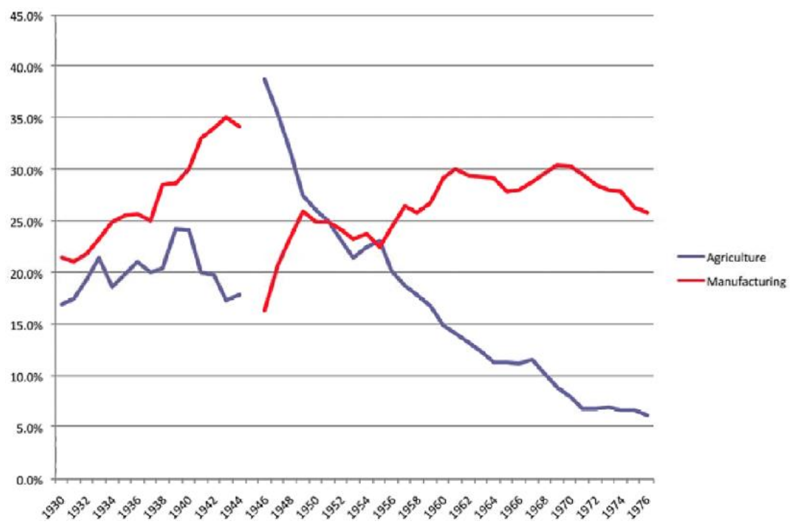
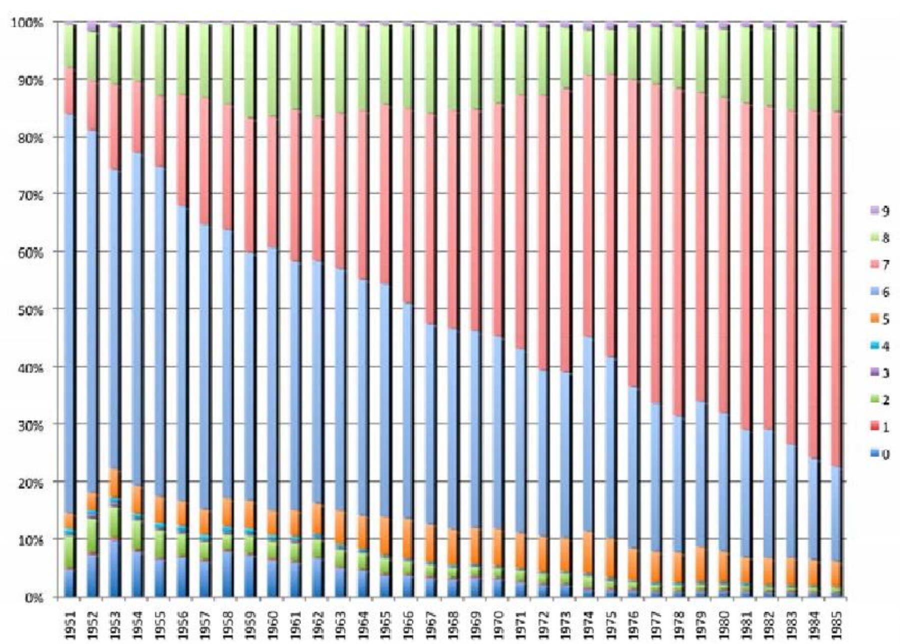


Figure 2.56: Shares of Agriculture and Manufacturing Value Added to Net Domestic Product, Japan, 1930-76

Source: Kimura (2009)



Note: SITC	0	Foordstuffs and animals	1	Beverages and tobacco
	2	Nonfood raw material (excl. mineral fuel)	3	Mineral fuels, lubricating oils, etc.
	4	Animal, vegetable oils and fats	5	Chemical products
	6	Manufactured goods by material	7	Machinery, transport equipment
	8	Miscellaneous	9	Special goods

Source: MCA-SB (1988, vol. 3: 18-21,10-2-d).

Figure 2.57: Composition of Japan’s Exports (in Millions of Yen), 1951-85

Source: Kimura (2009)

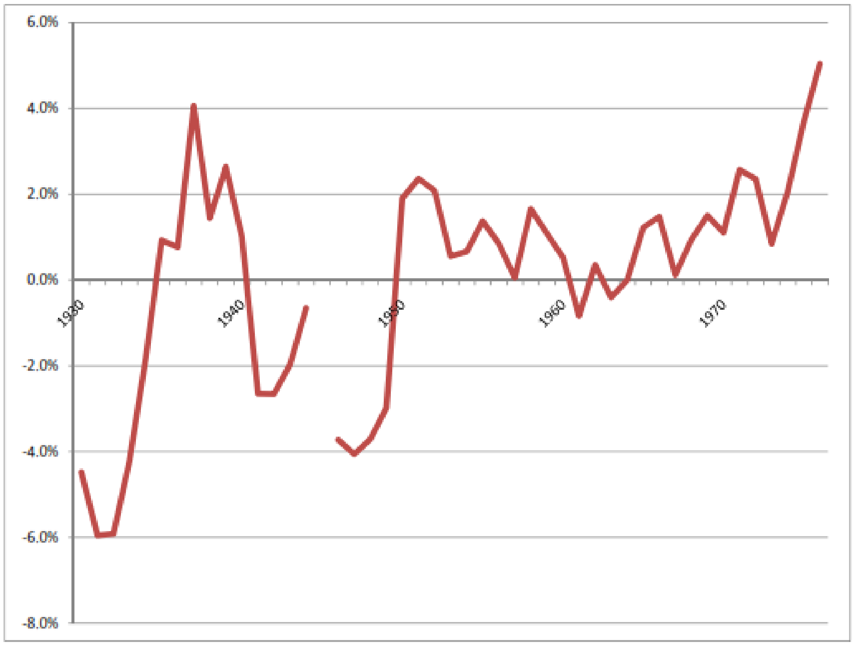


Figure 2.58: Rations of Current Account Surplus to Gross National Expenditure, Japan, 1930-76

Source: Kimura (2009)

The results of development are also evident in indices reflecting the quality of human resources. Japan has, since the days of Tokugawa, provided education to the general populace. Furthermore, after the Meiji Restoration, Japan elevated basic education as the first Asian country to legislate compulsory education for all citizens. In addition, universities were established nationwide to provide education to the public after the restoration. Having a population with higher levels of education has led to the continuous hiring of high-level researchers. As depicted in Figure 2.59, the employment structure has reached its highest level, with a workforce engaged in knowledge and skill-intensive sectors, particularly in research and development, experiencing continuous growth.

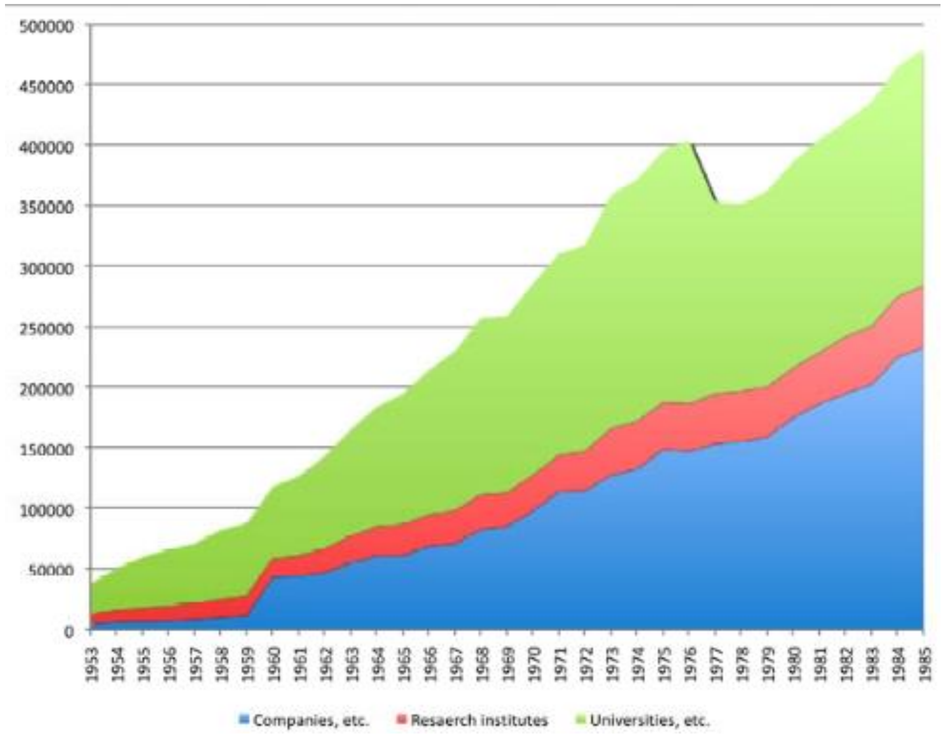


Figure 2.59: Number of Researchers, by Research Organizations, Japan, 1953-85

Source: Kimura (2009)

<u>Lessons from the Case of Japan</u>

1) While the promotion of newly emerging industries is discussed and serves as an example in many countries, the formulation and application of policies in real situations may not be suitable for every country and could yield opposite results.
2) Protecting nascent industries, in one dimension, may facilitate rapid development and continuous expansion of production capacity because it avoids excessive competition within each industry. However, in another dimension, it may lead to complacency and hinder innovation, affecting competitiveness in the global market. In the case of Japan, the driving force behind innovation and increased competitiveness primarily comes from the private sector, with government policies providing initial support during the early stages of industrial development.
3) It is acknowledged that government policies to protect nascent industries in the initial stages have a significant impact on industrial development. However, under current conditions, countries cannot escape global market competition and face

more stringent requirements from various trade agreements, making the use of these tools less effective.

4) During Japan's industrial development, there were significant constraints on both foreign capital and foreign technology, with both factors having minimal influence on Japan's development. Japan relied predominantly on domestic capital and technology. In contrast, in today's developing countries, both factors can be leveraged for industrial development.

Summary of Key Policy Recommendations for Developing Countries

(1) Economic stability at the macroeconomic level is a crucial foundational factor for industrial development. This includes maintaining the stability of currency exchange rates, controlling inflation, managing overall savings and investments, and monitoring public debt levels, among other factors.
(2) Policymakers must clearly identify problems and aim to address them as quickly as possible. Each industry may have unique challenges that need to be tackled.
(3) Leveraging foreign direct investment (FDI) for industrial development can lead to rapid progress by harnessing the benefits of foreign capital and technology.

Summary

When examining the temporal dimension, it becomes evident that both Japan and Thailand faced Western pressures at roughly the same time, leading both countries to sign free trade agreements. Furthermore, both countries were open to adopting technology resulting from the European Industrial Revolution during a similar period. However, a deeper historical analysis reveals significant differences in their economic development trajectories.

Although Japan had been under the Tokugawa shogunate before opening up to the world and experiencing the Meiji Restoration, its foundational education and business network systems (keiretsu) had been developing for centuries. Japan was ready to absorb and immediately utilize steam engine technology for economic purposes. This aligns with the conclusions presented in Section 1.5 (Chapter 1), which state that Japan's business development process was gradual and prepared the economic structure, trade, and banking sectors before the Industrial Revolution and opening up to the world. These developments set the stage for Japan's economic growth before World War I and II.

Japan's rapid post-World War II economic development resulted from government planning and the selection of key industries as the primary drivers of the economy. This selection of target industries was aimed at promoting exports, with bureaucrats being responsible for the selection. An agreement between the government, private sector, and citizens was reached to implement economic development plans, emphasizing top-down stimulation (trickle-down). Japan's unique economic and industrial network structure, known as "zaibatsu" and later "keiretsu," allowed them to adapt quickly. This network pattern later evolved into "keiretsu," characterized by multi-level network connections and played a significant role in successfully implementing trickle-down economics, effectively distributing income across the system and avoiding income inequality issues.

While Japan serves as an example of rapid economic development, it should be noted that not all methods and strategies employed in resource allocation for growth in specific industries can be universally applied to all countries and timeframes. This is due to trade agreements and investment restrictions in place today, preventing market distortion and the selective practice of taxes or protective measures to safeguard domestic industries. Furthermore, supporting and protecting certain industries may lead to opposite outcomes, creating market power imbalances and diminishing incentives for efficiency and innovation to enhance competitiveness both domestically and internationally.

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