



Title	A Comparative Study of Development Mechanisms in Korea and Taiwan: Introductory Analysis
Author(s)	Hattori, Tamio; Sato, Yukihiro
Citation	The Developing Economies 35.4 (1997.12): 341-357
Issue Date	1997-12
URL	http://hdl.handle.net/2344/123
Rights	

IDE-JETRO 日本貿易振興機構 (ジェトロ)
アジア経済研究所

A COMPARATIVE STUDY OF DEVELOPMENT MECHANISMS IN KOREA AND TAIWAN: INTRODUCTORY ANALYSIS

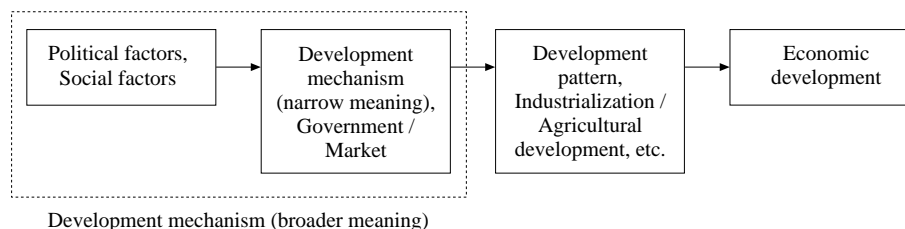
TAMIO HATTORI
YUKIHITO SATŌ

INTRODUCTION

THE extremely rare type of high-level, sustained postwar economic growth experienced by the Republic of Korea (hereafter Korea) and Taiwan has drawn the attention of many scholars interested in economic development. Many have also attempted to analyze the two economies as examples of identical economic phenomena. Since both economies' development pattern can be characterized by export-led industrialization depending on the Japanese and U.S. markets, such views are not at all surprising. However, having a common development pattern does not necessarily guarantee the existence of a common mechanism by which development was achieved. In fact, there is a heated debate in progress concerning the way in which Korea and Taiwan achieved development between those who support a market-led development hypothesis and those who support a government-led development hypothesis.

In the present paper, we aim to rid ourselves of such a debate by suggesting that there were different mechanisms by which the two economies developed and discussing the reasons why these mechanisms are different. In Section I, we will define what we mean by "development pattern" and "development mechanism." In Section II we will verify the similarity of Korea and Taiwan with respect to high-level economic growth and their development patterns. Then in Section III, we will review the research to date concerning development mechanism, show that both the market-led and government-led development hypotheses have been built upon strong a priori assumptions, and argue that the similarities and differences between development mechanisms in the two economies should be reexamined after removing such assumptions from consideration. This is one important aim of this paper. In Section IV, we will attempt to show through a comparison of trade balances, growth of total factor productivity (TFP), enterprise and business-group scale, and the development processes of individual industries in the two economies that it is impossible to imagine that Korea and Taiwan developed by the same

Fig. 1. Development Pattern and Development Mechanism



Source: Prepared by the authors.

mechanism. Okuda's paper in this special issue shows us the difference in TFP growth between two economies. In our investigation of enterprise scale, we will rely on the results of the research done by Abe and Kawakami, and with respect to our industrial analysis, we will rely on Satō's research on the machine-tool and electronics industries and Abe and Kawakami's research on synthetic fiber industry. Studies of enterprise scale and the electronics industry are also contained in this issue. Section V lays out the other important aim of this paper: to discuss the reasons why the development mechanisms in the two economies differ, by offering three explanatory hypotheses based on accumulation at the starting point of post-war industrialization, the relationship between government and society, and the mechanism of social network formation. We will rely on the paper written for this special issue by Wakabayashi concerning the relationship between government and society and on the papers written by Hattori and Numazaki on social network formation. A concluding section will outline the implications of our study.

I. DEVELOPMENT PATTERN AND DEVELOPMENT MECHANISM

We will consider the reasons for high-level economic growth in Korea and Taiwan as multifaceted like Figure 1. Here we would like to define two elements of such a logical structure: "pattern" and "mechanism."¹

To begin with, there are theoretically several number of paths economies can take in order to achieve economic development. The first step involves a choice between industrialization and agricultural development: the industrialization pattern may be of a domestic market-led or export-led type.² In addition, there is also

¹ Lewis (1984, p. 4) has classified the problem of development into "pattern" and "mechanism" (even though he used the term "engine of growth" instead of "mechanism"). However, the discussion in this paper does not necessarily agree with the content of Lewis's research.

² These two types of industrialization pattern are not related to government policy directions, but are rather classifications based on high or low levels of reliance by manufacturers on overseas markets measured in actual economic performance figures.

a choice between whether final, intermediate, and capital-goods markets will be developed together or in some sort of time succession. These kinds of path we will call “development patterns.”

If there is no one to decide which of the above paths to take and no one lead the economy along the path, no economic development can be realized. In the present paper, we will compare differences and similarities in “development mechanism” by comparing who chose a certain path to development and on the basis of what kind of principles such a choice was made. Therefore, we consider the market-led development hypothesis and the government-led development hypothesis as points of debate over “development mechanism.” Under a market-led development mechanism, households and private enterprises make economic decisions based on the principles of market-based competition; while under a government-led development mechanism, political leaders make the choice of which path they will take and attempt to directly and indirectly mobilize resources to the cause of development and growth.

As we will argue in Section V, the kind of “development mechanism” that will result is determined by various factors, in particular political and social factors. The ways in which such determinative factors are regarded are a “development mechanisms” in the broader sense, while the way in which a certain “development pattern” is chosen is “a development mechanism” in the narrow sense.

II. SIMILARITIES IN DEVELOPMENT PATTERNS: EXPORT-LED INDUSTRIALIZATION RELYING ON U.S. AND JAPANESE MARKETS

In this section, we will discuss the fact that the high levels of economic growth recorded by Korea and Taiwan were achieved through extremely similar development patterns. Yearly growth rates in the two economies’ respective per capita GNPs between 1965 and 1990 averaged 7.1 per cent (Table I). Only the country of Botswana performed better (World Bank 1992; ROC 1994). Also the fact that such high economic growth rates were accompanied by improvements in income distribution was one more characteristic feature of economic development in both economies (World Bank 1993, pp. 29–32).

As to the actual pattern, first, it is clear that high-level economic growth was achieved through industrialization; that is, the growth of the manufacturing sector. The importance of manufacturing sectors in the GDP of both economies since the 1960s has increased by more than 10 per cent and reached peaks of 33 per cent in 1988 (Korea) and 40 per cent in 1986 (Taiwan). Both the speed and the high levels characterizing these two growth processes are indeed rare cases in the history of developing economies. Moreover, the structural features of the manufacturing sectors in the both economies are similar. That is to say, labor-intensive industries,

TABLE I
ECONOMIC PERFORMANCE IN KOREA AND TAIWAN

		Korea	Taiwan
Per capital GNP (U.S.\$)	1961	83	152
	1990	5,659	7,954
Average growth rate of per capita GNP (%)	1960-90	7.1	7.1
Manufacturing output / GDP (%)	1961	9.1	18.9
	Peak	33.2 (1988)	39.7 (1986)
	1990	28.9	34.4
Exports / GDP (%)	1961	5.4	14.0
	Peak	41.5 (1987)	56.7 (1986)
	1990	31.0	46.5
Imports / GDP (%)	1961	14.9	21.1
	Peak	41.5 (1981)	53.8 (1980)
	1990	31.5	41.2
U.S. share of exports (%)	Peak in the 1980s	40.0 (1986)	48.8 (1984)
Japan share of imports (%)	Peak in the 1980s	34.4 (1986)	34.1 (1986)

Sources: Figures for Korea are from the Republic of Korea, National Statistical Office, *Major Statistics of Korean Economy*, various years; for Taiwan from the Republic of China, Council for Economic Planning and Development, *Taiwan Statistical Data Book*, various years.

Note: Taiwan's dependence on trade in terms of GNP.

represented by textiles, developed during the early stages, while from the 1970s on both capital-intensive and technology-intensive industries evolved.

Secondly, reliance on foreign trade rapidly grew in importance. While small economies like Korea and Taiwan are inclined to depend more on trade, exceptionally high-peak reliance levels of 42 per cent (Korea) and 54 per cent (Taiwan) were reached as to export share in 1980s. This phenomenon is very different from the situation in the newly industrializing countries of Latin America.

Finally, Korea and Taiwan possessed similar trading partners. On the export side, they both sold their manufactured goods mainly to the United States, the world's largest market, while on the import side, Japan was their main source of supply. At the peak years during the 1980s, both economies relied on the United States to consume 40 per cent or more of their exports, while over 30 per cent of the goods and services imported into the two economies came from Japan.

Summing up the above three characteristics of development in Korea and Taiwan, it is clear that both economies can be similarly described as developing

through “export-led industrialization with heavy reliance on the United States and Japan.” In other words, both economies achieved high-level growth by first importing intermediate and capital goods from Japan, processing them by utilizing rich sources of inexpensive labor, then exporting the finished goods to consumers in the United States. Also, because this process of industrialization involved mainly labor-intensive industries, the capability to absorb huge amounts of unskilled labor into the production process resulted in improvements in income distribution. Although both industrial structures would head from the 1970s in the direction of capital- and technology-intensive patterns, their reliance on importing much of the needed capital and intermediate goods, especially from Japan, remained as strong as before, and the markets for the goods produced remained overseas, predominantly in the United States, also as before.

III. DEVELOPMENT MECHANISM HYPOTHESES

None of the research to date has raised any argument about the above-mentioned facts concerning development patterns in Korea and Taiwan. However, as to how these patterns appeared—referred to as the “development mechanism” in the present paper—heated debate continues in the literature over two opposing conceptualizations: a market-led development hypothesis and a government-led development hypothesis. Let us first put the points of this debate into some order.

A. *The Market-Led Development Hypothesis*

According to this hypothesis, the governments of both Korea and Taiwan were restrained from intervening in their respective economies, resulting in a smoothly functioning market mechanism helping to achieve high-level economic growth. This hypothesis is supported by economists affiliated with the World Bank and the IMF, such as Bela Balassa and Anne O. Krueger.

Concerning restricted government intervention, since the publication of Balassa (1971), a “transition” from import-substitution policies to export-oriented policies in both states has been emphasized. It is thought that both states implemented import-substitution measures together with other developing economies beginning in the early 1950s; then Taiwan from the end of that decade and Korea from the early 1960s instituted various export-promotion policies, such as devaluating their foreign exchange rates, relaxing some quantitative restrictions, and reducing tariffs. According to the market-led development hypothesis, this policy transition is interpreted as the liberalization of the two economies needed to realize the high levels of growth that followed.³

³ In fact, the deregulation of imports was carried out on a very limited basis. For this reason, any bias toward import-substitution must be offset by such export-oriented measures as rebate systems, bond systems, and export loan programs.

Empirical work done by Balassa (1978) includes periodical analysis of export incentives carried out in eleven different countries, including Korea and Taiwan. Balassa showed that the best performances have been achieved by Korea, Taiwan, and Singapore, all of which have continuously implemented export-oriented measures. In a joint research project with economists from several countries (Balassa 1982), he compared effective protection rates and found them to be at their lowest in Korea and Taiwan.

In response to criticism from supporters of the government-led development hypothesis, the World Bank revised its position somewhat by introducing such concepts into the market-led development hypothesis as contest-based competition and financial restraint (World Bank 1993); however, in its continuing denial of any sector-specific intervention by government (p. 312), it has not changed its original position that Korean or Taiwanese governments have not guided their respective economies toward prosperity.

B. *The Government-Led Development Hypothesis*

In directly opposing the market-led development hypothesis, this conceptualization of development mechanism regards the economic development realized in Korea and Taiwan as the result of active intervention by their governments in economic affairs. Alice H. Amsden and Robert Wade are typical supporters of this hypothesis, who offer a rich body of factual information in support of government intervention being conducted even after the 1960s, a time when, according to the market-led development hypothesis, economic liberalization was being implemented.

Amsden (1989, p. 80) has attempted to show that choices in Korea concerning where capital will be invested are not made by private business, but by the government. In support of her claims, she cites the passage of the Electronics Industry Promotion Law, which played an active role in the R&D planning, fund procurement, and the establishment of a research institute for semiconductor-related development (Amsden 1989, pp. 82–83). She also analyzes the development of the shipbuilding and steel industries, concluding that the government played an important role there as well (Amsden 1989, chs. 11, 12).

Wade has depicted government intervention in Taiwan from two different approaches. The first analyzes specific industries (Wade 1990, ch. 4), emphasizing the petrochemical and steel industries, which were set up in the form of public enterprises. The other approach involves the analysis of policy measures (Wade 1990, chs. 5, 6), in which he shows that (1) the effects of tariffs in distorting Taiwan's price mechanism were not small; (2) the government imposed various conditions on allowing foreign direct investment; and (3) an important role was played by public-enterprise-dominated industry building and tax holidays.

C. *Getting beyond the Debate*

The research done by Amsden and Wade telling of widespread government intervention of both the economies of Korea and Taiwan is difficult to refute. In particular, the discovery of intervention policy directed toward specific industries has cast doubt upon the market-led development mechanism hypothesis. At the present time, the focus of the debate has been shifted to the problem of whether or not such industry-specific policy was really effective. Nevertheless, from the empirical research that has been done to date, there is no easy way to disprove one side or the other. We therefore see no apparent end to the market-led vs. government-led development debate. The market-led development side in the debate has set upon the task of denying the effectiveness of government intervention through quantitative analysis, but has not met with much success.

For example, the World Bank (1993, ch. 6) has utilized estimates of TFP in order to refute the effectiveness of discriminatory industrial policy. However, if we take into consideration such factors as the linkage effects of industrial policy and the time lag that exists between implementation and result, there is room for doubt as to whether TFP is a suitable indicator of policy effectiveness.⁴

In addition, the study by Stern et al. (1995) contains an extremely detailed analysis of heavy industrialization in Korea during the 1970s, and in Chapter 5 there is a scrupulous cost-benefit analysis of individual projects. On the whole, the authors of this study are skeptical about the effects of intervention by the Korean government; however, looking at their analytical results in a more impartial manner, although there is no evidence to praise the effects of industrial policy, there is also no evidence for condemning such policy.⁵

Before we state our view concerning the problem, we must free ourselves from the influence of both hypotheses. Although these two hypothesis put their supporters on opposite ends of the question over whether government intervention in industry is present or necessary, they display a strange match-up by lumping together Korea and Taiwan economies. Treating the two economies in this manner results

⁴ This doubt has been raised by both Masayoshi Shiratori and Wade. See World Bank and OECF ([1993], pp. 37, 39).

⁵ They set up two measurement standards (Stern et al. 1995, pp. 189–90). The first is a “market conforming test,” which considers a project targeted by industrial policy successful if the rate of return surpasses the cost of capital in both base-year and current prices. The second is a “non-market conforming test,” which considers a project successful if the rate of return does not surpass the cost of capital in base-year prices but eventually surpasses in current prices.

None of the projects studied conformed to the second standard, while half of the tests for the first standard failed, while the test for the second standard was probably too rigorous to judge the true effects of industrial policy. Furthermore, they mention that even if a project were to meet the first standard, there still may not be any reason to support the necessity of industrial policy. In any case, they do not present adequate proof for condemning such policy, and their methodology cannot take into account the linkage effects of industrial policy.

from very strong a priori assumptions in each hypothesis. Specifically, the market-led development hypothesis assumes, as Yōnosuke Hara (1994) has claimed, “an imperfect state characterized by widespread corruption and a perfect market that will function efficiently only if the stupid coercive policies of that government are removed” (p. 42). On the other hand, the government-led development hypothesis assumes “a state whose administrative capability is manned by autonomous bureaucrats not involved with the country’s vested interest groups and an imperfect market that is in apparent danger of not functioning properly due to the presence of economies of scale and complementarity among firms” (p. 43). The main problems with these assumptions are the “perfect market” in the former and “the strong and wise state” in the latter, for which there is no evidence.⁶ Rather, we need to begin studying the extent to which markets worked well and the level to which the state appeared strong and wise in its judgments.

By freeing ourselves from the untenable assumptions behind the market- and government-led development hypotheses, we also free Korean and Taiwanese economies from lump-sum analysis. This is where the first important point to be made in this paper—are the development mechanisms in the two economies identical?—comes into focus.⁷

IV. DEVELOPMENT MECHANISMS IN KOREA AND TAIWAN

With respect to the development mechanism in Korea and Taiwan, we look upon that of the former as more government-led in character, and that of the latter as more market-led. This hypothesis is supported by the following facts.

First, the balance of payments and the investment-savings gap in the two economies are completely different. With the exception of a few years during the late 1980s, Korea experienced deficits in its balance of payments as investment exceeded savings. Especially during the 1970s, the trade deficit continued to widen appreciably. On the other hand, with the exception of the oil-crisis years at the beginning of the 1970s, Taiwan continued after 1971 to experience trade surpluses, as savings exceeded investment. As far as the 1970s is concerned, the reasons for such differences are that Taiwan was able to cover investment utilizing a high rate of saving, while the Korean government, despite a lower rate of saving, ambitiously promoted investment by introducing money from abroad.

⁶ For example, Wade (1990, p. 256) states that economic administrators in Taiwan have been separated from the political process; but this is hardly sufficient proof that the Taiwanese government is strong and of wise judgment.

⁷ As mentioned in the following section, although there is plentiful research comparing Korea and Taiwan economies, not one study has been done in the context of juxtaposing the market-led and government-led development hypotheses. In addition, although the research done from each standpoint does not ignore the differences existing between the two economies, due to the above-mentioned stringent assumptions, such differences always seem to appear as secondary.

Secondly, the pattern of TFP growth in the two economies is different, according to Okuda's paper in this issue. First, the contribution of TFP to growth is larger in Taiwan than in Korea. This fact is compatible with our hypothesis because the efforts by Korean government concentrating on mobilization and introduction of money from abroad, which was the most scarce resource, while the Taiwanese private sector contrived to improve productivity without aggressive governmental support. Secondly, Okuda reveals that the export ratio had a negative effect on TFP growth in Korea, which is considered to be caused by policies which requesting enterprises to export, even when such activity was not profitable, in exchange for favored status in protected domestic market.

Thirdly, individual enterprises and business groups in Korea and Taiwan differ with respect to size.⁸ The Korean government took the lead in guiding the economy toward industrialization; but it did not attempt to conduct managerial operations per se in each industry. Instead, a small number of business groups worked as agents implementing the government's plan in exchange for favored treatment in such areas as subsidized loans (Scitovsky 1990, p. 144; Vogel 1991, p. 61). These groups have developed into huge conglomerates called *chaebol*. On the other hand, the Taiwanese government adopted few special measures geared to specific sectors, and, moreover, since it took no special measures to allot investments funds in favor of any business groups (Scitovsky 1990, pp. 137–38).⁹ Therefore, Taiwanese business groups did not grow to the mammoth size of their counterparts in Korea. However, within export sector, which is characterized by relatively free competition, from the 1970s on small and medium-size enterprises (SMEs) took the lead and in so doing became the main support of Taiwan's industrialization.¹⁰ We think that such differences in enterprise size in the two economies also reflects the differences in their respective development mechanisms.

A detailed study comparing enterprise size in Korea and Taiwan has been contributed to this special issue by Abe and Kawakami. Let us merely summarize their conclusions here.

To begin with, a comparison of industrial census data from Korea and Taiwan shows that during the 1980s the ratio of output of enterprises with 500 or more employees to total manufacturing production output was 10 points higher in Korea. Secondly, the importance of top business groups in the two economies was far

⁸ The research that first took special notice of such differences in enterprise size was done by Twu (1987), Scitovsky (1990) and Vogel (1991).

⁹ Fields (1995) has argued that the governments in both states can be called "strong," but the Taiwanese government differed in the conscious efforts it made to restrict the size of Taiwanese business groups. As to the reasons for such attempts, Fields cites Kuomintang ideology and it fears as a "mainlander" government that the power of indigenous Taiwanese capital would be enhanced.

¹⁰ To the question of why SMEs, one answer is that these businesses and the networks they form are superior due to their flexible and efficient response to fluctuations in overseas markets (Shieh 1992). For a more detailed explanation, see Sato (1996b, pp. 101–13).

greater in Korea than in Taiwan. Thirdly, the authors looked at the role played by SMEs in the export sectors of both economies and found that the ratio of SME exports to total exports in Taiwan was greater, and that the export ratio in their sales figures was greater than that of their counterparts in Korea.

The first two findings clearly coincide with the situation we have described concerning the relationship between industrial policy and business groups in the two economies; however, the third point deserves some additional explanation. The cause of Taiwanese SMEs' dominant role in the export sector has already been explained, but we should ask why the presence of SMEs in exporting in Korea is so small, or rather why large enterprises or *chaebol* have assumed the central role in this sector. The reason again must be attributed to the way in which the government has chosen to direct economic development in Korea. The Korean government has given top priority to exports in its industrial policy and has allotted favors, such as subsidized loans, to those who have performed well in this sector (Taniura 1989, p. 127; Amsden 1989, pp. 16, 69–70).¹¹ Therefore, in order to gain access to such loans *chaebol* strove to improve their export performances by any means possible, including exporting below cost. It is also possible to conclude that the way in which business groups were transformed into *chaebol* was by successfully expanding their export businesses, then gaining access to subsidized loans, which enabled them to grow in size. In particular, we should note that despite such complete differences in the development mechanism of the two economies, both economic development patterns are characterized by the same export-led type.

The fourth set of facts in empirical support of our hypothesis comes from the analysis of the development process of individual industries in the two economies, which again demonstrates differences in development mechanism. Here we analyzed three industries: synthetic fiber, machine tools, and electronics (Abe and Kawakami 1996, Satō 1996a, Satō's paper in this special issue).¹² These industries in both economies are similar in that all six have expanded production rapidly over the decades; however, they possess different characteristics with respect to such aspects as industrial organization and market structure, the results of differences in their development mechanisms.

Looking at the synthetic fiber industry up through the 1980s, the first difference is an oligarchic industrial organization in Korea versus fierce competition in Taiwan. Secondly, in Korea most synthetic fiber was exported after domestic processing, thus seldom exported as a raw material. In Taiwan the export rate of raw fiber

¹¹ The World Bank (1993, pp. 93–102) has called this policy “a contest.” In other words, in Korea the government acts as “referee” in a game played by “rules” based on export performance, and such “prizes” as access to subsidized loans go the winners.

¹² The pioneers in the comparison of individual industries in the two economies are Levy (1991) for shoemaking, Jacobsson (1984) for machine tools, Mody (1990) and Levy and Kuo (1991) for electronics.

was high. These differences were due to the Korean government making adjustments in fiber production according to the capacity of the midstream, including the spinning and weaving sector, which processed the fiber and imposing restrictions on industry entry, in an attempt to increase per company production scale. In Taiwan the government's control over the industry was weak, allowing virtual free industry entry and increases in capacity, resulting in periodic overproduction which the mid- and lower streams were incapable of handling and were immediately exported. However, under such conditions, companies began to adopt strategies taking exporting into account.

In the Korean machine-tool industry, the export rate was low and in-house processing the rule. In Taiwan, the export rate was high, and a lot of subcontracting was done. In Korea during the 1970s, the government fostered the machine-tool industry as an import-substitution industry, protecting the domestic market and urging users to buy Korean. The government also demanded that makers in the industry up grade their products as quickly as possible, a situation to which the existing supporting industry could not respond, resulting in the high proportion of in-house production. In Taiwan up through the 1970s, the machine-tool industry received almost no assistance from the government, and since 1980 the government has played only a minor role. However, the industry's makers began to sell their products to Southeast Asian markets during the 1960s and the low-end U.S. market during the 1970s through their own initiative. While the quality of these goods was low, their cheap price made entry into these markets possible. American sales of Taiwanese machine tools brought about a sudden jump in production scale, causing increased specialization, which in turn helped the industry to further develop.

With respect to the electronics industry, while Korea holds an advantage in integrated circuits, matching the United States and Japan in DRAM production in particular, Taiwan is the world's leading personal computer (PC) manufacturer. In Korea the huge *chaebol* formed by the government's industrial policy used its financial power to begin DRAM production. On the other hand, in Taiwan during the 1970s a network of SMEs began producing such electronics items as calculators and telephones, then expanded into PC production (Kawakami 1996). The flexibility and quick responses of this SME network is perfectly suited to the short commodity cycle of PC manufacturing.

In sum, the trade balances, TFP growth, sizes of enterprises and business groups, and the development process of the three industries are all clearly different in Korea and Taiwan and support our hypothesis that Korean development mechanism has been mostly government-led, while the development mechanism in Taiwan has been mainly guided by the auspices of the market.

V. THE REASONS FOR THE DIFFERENCES

Assuming that we have proved the development mechanisms in Korea and Taiwan to be different, let us look at why. We have come up with three explanatory hypotheses.

First, we should focus on different levels of capital accumulation at the starting points of postwar economic development, or industrialization, in the two states. In Korea hopes were very high for accelerated development, but the economy itself was still at a very low level. We think that this situation forced policymakers and the people to believe that development should be carried out through a strong government-led mechanism.

The fact that Korean level of economic development was lower than that of Taiwan is evident in the figures on per capita GNP. In 1961, per capita GNP in Korea was only 55 per cent of the figure recorded by Taiwan. The savings rate in Korea would continue to fall below the Taiwanese rate which was supposedly caused mainly by the lower levels of productivity. Furthermore, Taiwan was already producing sugar as a powerful agricultural export, enabling a certain level of foreign currency acquisition. Korea fell behind in this aspect.

Industrialization in Korea also lagged behind. Looking back on the period during which both countries were colonies of Japan, industrialization was progressing during the 1930s and the Korean Peninsula was developing ahead of Taiwan. However, most of the factories were located in the north, and with the division of the peninsula after World War II, Korea was cut off from the major industrial regions. Also, most of the manufacturing enterprises including SMEs in prewar Korea was owned and managed by Japanese. On the other hand, although many large corporations were also owned and managed by Japanese, the SMEs were owned and managed by Taiwanese (Kimura 1988; Yamamoto 1992). Therefore, after the war Korea experienced setbacks both in terms of manufacturing facilities and human resources, even before the destruction inflicted on the economy by the Korean War.

As a result, the resources, especially capital, necessary for economic development was seriously lacking in Korea. It is our opinion that in order to utilize effectively the scarce resources that were available, it was hoped that the government would step in and ration them in a centralized manner. For this purpose the Park Chung-hee administration nationalized the country's financial institutions and took control of loans from overseas. On the other hand, Taiwan's economic level was relatively higher, and although there too capital was scarce, the situation was by no means as critical as in Korea, allowing Taiwan to take a more relaxed approach to economic development.

Secondly, let us consider differences between Korea and Taiwan in the relationships that exist between government and the private sector, or state and society in

general. The case of Taiwan is probably easier to understand. The “quasi-conquering state” formed by the Kuomintang on the island after the civil war has a very strong character (Wakabayashi’s paper) and has created a deep rift with the local Taiwanese community. In particular, during the regime of Chiang Kai-shek, the government took a detached attitude toward society and lacked concern about the economic development of the island. In response, the people have nothing but distrust and contempt for the government, making it impossible for the latter to mobilize society’s various resources. It was this relationship between the government and society that forms the background of the poor response by the private sector¹³ to the government’s call for investment to fund heavy industrialization in the 1970s.¹⁴

On the other hand, although Korea has been the scene of regional conflicts, the situation, especially prior to the Kwangju Incident, was nowhere near as tense as in Taiwan. Rather, the thinking and goals concerning economic development held by most people in Korean society are the same as those held by the government, thus creating ideal conditions for a government-led development mechanism. That is to say, given the universal goal in Korea of reunifying the peninsula, the building of a national, or self-sufficient, economy was envisioned. As long as the government enlisted this goal as the standard for its leadership in economic development, society accepted that role, and the Park administration was legitimized to some extent.

Our third hypothesis attempts to explain differences in development mechanism in terms of differences in the social systems of Korea and Taiwan.¹⁵ In the case of Taiwan, the indigenous Taiwanese community is formed by networks characteristic of traditional south China society. These networks are horizontal, open, and flexible. By horizontal we mean each network member is highly independent and cannot be easily controlled from above or subordinated. By open we mean that network boundaries are not well defined and that they can be expanded when deemed necessary. By flexible we mean that human relationships in these networks are very functional in the sense that they become active when needed and inactive when not needed. The networks formed by SMEs, the core of Taiwan’s market-led development mechanism, have been constructed upon the principles of the networks traditionally formed by local Taiwanese. The resources—financial, human, market, and material—necessary for SMEs to be founded and survive are all made available through networks. Because of such networks, resources can be efficiently

¹³ For example, in the case of the planned construction of an integrated steel mill, only 18 per cent of the capital requested from the private sector was actually received (ROC 1979).

¹⁴ The research done by Fields (1995) comes close to our second hypothesis. As mentioned in the footnote 9, he focused on the differences in Korea and Taiwan concerning enterprise size and searched for the cause of such differences in the views of their governments.

¹⁵ For further details, see the papers in this issue written by Hattori and Numazaki. See also Sechiyama (1996).

allocated even if the government does not intervene in the economy, or even if the formal market system is not very well developed.

On the other hand, although Korean society is also built on the network principle, networks there are more vertically organized than in Taiwan, have definite boundaries beyond which they cannot expand, and are characterized by permanent, lasting relationships. The Korean development mechanism, in which the government controls scarce resources and has under it specific *chaebols* that directly run industries, is clearly adapted to the principles of the Korean social network. Or it may be more correct to say that the principles for forming Korean networks assume the presence of government.¹⁶

The above three hypotheses are not necessarily alternative, but rather complementary. Under hypothesis 2, it would be difficult for Taiwan to adopt a government-led development mechanism; however, the spontaneity with which its market-led development mechanism was formed is explained by hypotheses 1 and 3. Concerning Korea, all three hypotheses explain the reasons for its government-led development mechanism from several different facets.

CONCLUSIONS

In the present paper, we have attempted to show that while Korea and Taiwan exhibit similar patterns in the process of their economic development, the mechanisms by which they developed are very different. According to the form outlined in Figure 1, Figure 2 depicts the development patterns and mechanisms of Korea and Taiwan.

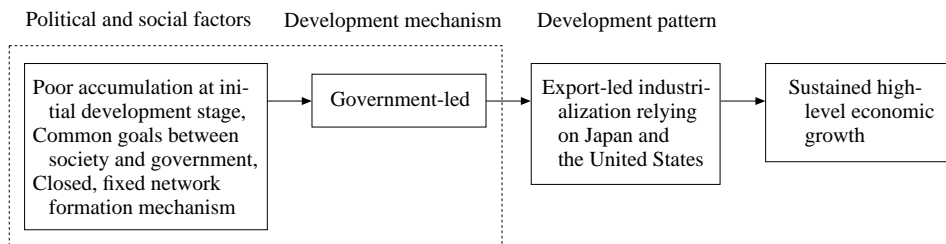
In conclusion we would like to discuss what implications for other developing economies can be derived from the difference between these two economies. The debate over whether Korea and Taiwan economies have been market- or government-led has constituted an important part of the general effort to figure out what level of government intervention was necessary in order to attain economic development. However, in the present paper we have attempted to show that since the development mechanisms of the two economies are clearly different, it is difficult to build a single development model based on the Korean and Taiwanese experiences. The implication here is that there is no single development mechanism, but possibly many diverse mechanisms, meaning that it is impossible to offer general models regarding the role of government and that of the market.

However, such a conclusion merely returns us to our point of departure. A more constructive implication of our study lies in our hypothesis that the differences in

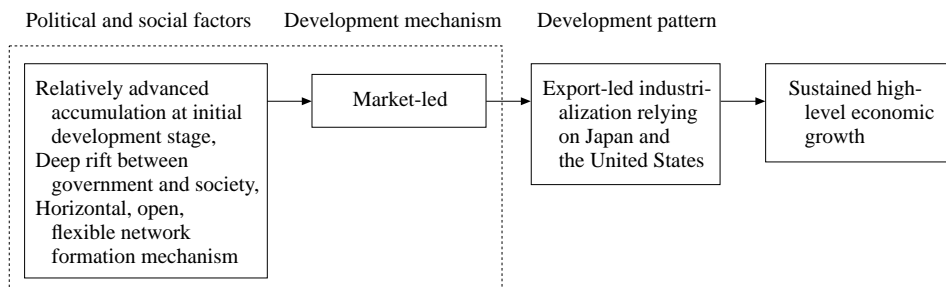
¹⁶ The formation principles of the Korean network originated from the mechanism by which bureaucrats posts were distributed during the Li dynasty (Hattori 1988, 1992). In the sense that bureaucrats posts constituted the scarce resource controlled by the government at that time, they are the equivalent of access to subsidized loans today.

Fig. 2. Development Patterns and Development Mechanisms in Korea and Taiwan

a. Korea



b. Taiwan



Source: Prepared by the authors.

the development mechanisms of Korea and Taiwan are attributable to social and political differences and differences in the relationship between government and society. Therefore the development mechanism desirable in each country of the world depends on how government should work, how society should work, and what the relationship between the two should be. From our observations we have been able to identify as some concrete conditions in the selection and introduction of development mechanisms (1) whether or not government and society possess common goals, (2) society's principles of network formation, and (3) society's past experience with industrialization. If the first item can be considered a necessary condition for a government-led development mechanism, and items 2 and 3 necessary conditions for a market-led development mechanism, the selection of a development mechanism would therefore depend on which conditions can be best satisfied. If such conditions are lacking, it would, under our assumption, be necessary to begin with creating policies that would make it possible to satisfy such conditions. In using such an approach, the experience of Korea and Taiwan will certainly provide us with more, perhaps better, implications about economic development strategy.

REFERENCES

- Abe, Makoto, and Kawakami, Momoko. 1996. "Gōsei sen'i sangyō—Kasen-teki sangyō soshiki, tei-yushutsu hiritsu no Kankoku to hageshii shijō kyōsō, kō-yushutsu hiritsu no Taiwan—" [The synthetic fiber industry: Oligarchy and low export rates in Korea, lively competition and high export rates in Taiwan]. In *Kankoku, Taiwan no hatten mekanizumu* [Development mechanisms in Korea and Taiwan], ed. Tamio Hattori and Yukihito Satō. Tokyo: Institute of Developing Economies.
- Amsden, Alice H. 1989. *Asia's Next Giant: South Korea and Late Industrialization*. New York: Oxford University Press.
- Balassa, Bela. 1971. "Industrial Policies in Taiwan and Korea." *Weltwirtschaftliches Archiv* 106, no. 1: 55–77.
- . 1978. "Export Incentives and Export Performance in Developing Countries: A Comparative Analysis." *Weltwirtschaftliches Archiv* 114, no. 1: 24–61.
- . 1982. *Development Strategies in Semi-Industrializing Economies*. Baltimore, Md.: Johns Hopkins University Press.
- China, Republic of (ROC), Council for Economic Planning and Development. 1979. *Shixiang zhongyao jianshe pinggu* [Appraisal for Ten Major Development Projects for economic building]. Taipei: Council for Economic Planning and Development.
- Fields, Karl J. 1995. *Enterprise and the State in Korea and Taiwan*. Ithaca and London: Cornell University Press.
- Hara, Yōnosuke. 1994. *Tōnan Ajia shokoku no keizai hatten—Kaihatsu-shugi-teki seisaku taikai to shakai no hannō*—[Economic development in the countries of Southeast Asia: Developmentalistic policy and society's response]. Tokyo: Ripuopōto.
- Hattori, Tamio. 1988. *Kankoku no keiei hatten* [Development of business management in Korea]. Tokyo: Bunshindō.
- . 1992. *Kankoku—Nettowāku to seiji bunka*—[Korea: Human networks and political culture]. Tokyo: University of Tokyo Press.
- Jacobsson, Staffan. 1984. "Industrial Policy for the Machine Tool Industries of South Korea and Taiwan." *IDS Bulletin* 15, no. 2: 44–49.
- Kawakami, Momoko. 1996. *Development of the Small- and Medium-Sized Manufacturers in Taiwan's PC Industry*. Discussion Paper Series, no. 9606. Taipei: Chung-Hua Institution for Economic Research.
- Kimura, Mitsuhiro. 1988. "Taiwan, Kankoku no kō-kōgyō: Suikei to bunseki" [Mining and manufacturing in Korea and Taiwan: Estimates and analysis], in *Kyū-Nihon shokuminchi keizai tōkei* [Economic statistics on former Japanese colonies], ed. Toshiyuki Mizoguchi and Mataji Umemura. Tokyo: Tōyōkeizai Shimpōsha.
- Levy, Brian. 1991. "Transaction Costs, the Size of Firms and Industrial Policy: Lessons from a Comparative Case Study of the Footwear Industry in Korea and Taiwan." *Journal of Development Economics* 34, nos. 1/2: 151–178.
- Levy, Brian, and Wen-jeng Kuo. 1991. "The Strategic Orientations of Firms and the Performance of Korea and Taiwan in Frontier Industries: Lessons from Comparative Case Studies of Keyboard and Personal Computer Assembly." *World Development* 19, no. 4: 363–74.
- Lewis, W. Arthur. 1984. "The State of Development Theory," *American Economic Review* 74, no. 1: 1–10.

- Mody, Ashoka. 1990. "Institutions and Dynamic Comparative Advantage: The Electronics Industry in South Korea and Taiwan" *Cambridge Journal of Economics* 14, no. 3: 291–314.
- Satō, Yukihito. 1996a. "Kōsaku kikai sangyō—Naiju shikō, kō-naiseika-ritsu no Kankoku to yushutsu shikō, gaichū izon no Taiwan" [The machine-tool industry: Domestic-demand orientation and in-house production in Korea, export orientation and subcontracting in Taiwan]. In *Kankoku, Taiwan no hatten mekanizumu* [Development mechanisms in Korea and Taiwan], ed. Tamio Hattori and Yukihito Satō. Tokyo: Institute of Developing Economies.
- . 1996b. "Taiwan no keizai hatten ni okeru seifu to minkan kigyō—Sangyō no sentaku to seika—" [Government and private enterprise in the economic development of Taiwan: Industry choice and performance]. In *Kankoku, Taiwan no hatten mekanizumu* [Development mechanisms in Korea and Taiwan], ed. Tamio Hattori and Yukihito Satō. Tokyo: Institute of Developing Economies.
- Scitovsky, Tibor. 1990. "Economic Development in Taiwan and South Korea, 1965–1981." In *Models of Development: A Comparative Study of Economic Growth in South Korea and Taiwan*, ed. Lawrence J. Lau, revised and expanded edition. San Francisco: ICS Press.
- Sechiyama, Kaku. 1996. "Kankoku, Taiwan keizai no bunka-teki hi-kōsokusei" [Cultural aspects of Korean and Taiwan economies]. In *Kankoku, Taiwan no hatten mekanizumu* [Development mechanisms in Korea and Taiwan], ed. Tamio Hattori and Yukihito Satō. Tokyo: Institute of Developing Economies.
- Shieh, G. S. 1992. *"Boss" Island: The Subcontracting Network and Micro-Entrepreneurship in Taiwan's Development*. New York: Peter Lang.
- Stern, Joseph J., et. al. 1995. *Industrialization and the State: The Korean Heavy and Chemical Industry Drive*. Cambridge: Harvard Institute for International Development.
- Taniura, Takao. 1989. *Kankoku no kōgyo-ka to kaihatsu taisei* [Industrialization and development system in the Republic of Korea]. Tokyo: Institute of Developing Economies.
- Twu, Jaw-yann. 1987. *Dochaku to kindai no Nikkusu, Asean—Sōkoku to kyōsei no keizai shakai—* [Indigenous and modern NICs ASEAN: Economies and societies in conflict and coexistence]. Tokyo: Ochanomizu Shobō.
- Vogel, Ezra F. 1990. *The Four Little Dragons: The Spread of Industrialization in East Asia*. Cambridge, Mass.: Harvard University Press.
- Wade, Robert. 1990. *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton: Princeton University Press.
- World Bank. 1992. *World Development Report 1992: Development and the Environment*. New York: Oxford University Press.
- World Bank. 1993. *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press.
- World Bank, and Overseas Economic Cooperation Fund (World Bank and OECF). [1993]. *A Symposium Jointly Hosted by the World Bank and the Overseas Economic Cooperation Fund (OECF), The East Asian Miracle: Proceedings*. Tokyo: World Bank and Overseas Economic Cooperation Fund.
- Yamamoto, Yūzō. 1992. *Nihon shokuminchi keizai-shi kenkyū* [Studies in the economic history of Japanese colonialism]. Nagoya: Nagoya Daigaku Shuppankai.

South Korea, Taiwan, and Thailand have achieved relatively high growth since the 1960s and macroeconomic policies have focused on export led growth. South Korea and Taiwan have many similarities in terms of economic growth, size, population, and dependency on energy imports. Growth in Thailand was very high during the 1990s. 3. Hattori, Tamio and Yukihito Sato (1997) A Comparative Study of Development Mechanisms in Korea and Taiwan: Introductory Analysis, *The Developing Economies*, 35, 341-357. Hsiao, Cheng (1979) Causality Tests in Econometrics, *Journal of Economic Dynamics and Control*, 4, 321-346. A Comparative Study of Development Mechanisms in Korea and Taiwan: Introductory Analysis. Hattori Tamio and Sato Yukihito. *The Developing Economies*, 1997, vol. 35, issue 4, 341-357. Abstract: This article is the introduction to a special issue of *The Developing Economies* which presented the results of a research project by the Institute of Developing Economies that examined the development mechanisms in Korea and Taiwan. We verified this difference through comparative studies of the two economies covering trade balances, the growth of total factor productivity, the scale of enterprises and business groups, and the development processes of individual manufacturing sectors. Land Reform, Inequality, and Corruption: A Comparative Historical Study of Korea, Taiwan, and the Philippines. *The Korean Journal of International Studies* Vol.12-1 (June 2014),191-224. 34 Pages Posted: 6 Oct 2014. See all articles by Jong-sung You. You, Jong-sung, Land Reform, Inequality, and Corruption: A Comparative Historical Study of Korea, Taiwan, and the Philippines (June 2014). *The Korean Journal of International Studies* Vol.12-1 (June 2014),191-224, Available at SSRN: <https://ssrn.com/abstract=2505635>. Jong-sung You (Contact Author). The Australian National University (email). Public Choice: Analysis of Collective Decision-Making eJournal. Subscribe to this free journal for more curated articles on this topic. FOLLOWERS. This study uses network analysis to examine and compare the structural characteristics of the innovation systems of Taiwan and China, where 21 manufacturing sectors are treated as nodes and the innovation diffusion among them is treated as a series of edges. Network analysis uses two kinds of mathematical tools to represent information on relationship patterns among actors, namely, graphs and matrices.