

## The Way Forward: Industrialization Challenges and Implications for Japanese Development Policy Support

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[A] central focus of development policy should be closing that gap [a gap in knowledge]—and that means enhancing learning. This is, for instance, one of the central objectives of modern industrial policies, which seek to promote particular industries and particular technologies with greater learning capabilities and greater spillovers to other sectors. (Stiglitz and Greenwald 2014, 22)

### 1. Introduction

This volume examines the role of industrial policies in promoting the structural transformation of catching-up economies through learning processes, and also considers the role of Japanese development policy support—one type of intellectual cooperation—in facilitating indigenous learning of latecomer countries. Our main interest has been the practical aspects of industrial policymaking—policy content and methodology for its design and implementation—because this is a most crucial point that affects the effectiveness of industrial policy, as contemporary debates suggest.

The volume is based on a premise that industrial policy contributes importantly to promoting indigenous and societal learning, which is essential for latecomer countries to attain industrial catch-up. Our thinking is greatly inspired by two lines of thought: (i) Stiglitz and Greenwald’s vision toward ‘creating a learning society’ which emphasizes the significance of local learning and the role of industrial policy in development (Stiglitz and Greenwald 2014); and (ii) Maegawa’s theory of translative adaptation (Maegawa 1994, 1998, 2000), which attaches high importance to indigenous perspectives and local learning. To this end, we have developed an analytical framework by synthesizing Stiglitz’s

knowledge-centered development thinking toward an industrialized economy and Maegawa's theory of translative adaptation (Chapter 1, Figures 1.2 and 1.3).

Chapters in Part I presented various case studies and suggest that different policy content, distinctive learning patterns, and diverse paths to industrialization are available to developing countries. They also show how industrial policies have worked in Japan, Korea, Malaysia, Brazil, and Chile to support the accumulation of technological capabilities, the transformation of their organization of production, and the promotion of research and development, especially at the initial stages of industrial catch-up (Cimoli et al. 2008). Part I also sheds light on the government as a learner of industrial policymaking, based on the specific case of Meiji Japan. For the government to effectively promote societal learning, it must learn how to grasp the real needs of actors within the economy and interact with them, in close partnership with the private sector.

Japan is one of the few donors that provides industrial policy support to developing countries. While not so many donors show interest in industrial policy, Japan considers it important to strengthen the government's capacity for industrial policymaking. Chapters in Part II presented various case studies on the perspectives and approaches underlining Japanese policy support for industrial development in Argentina, Vietnam, Ethiopia, and Thailand. As these case studies show, the objectives and nature of Japanese policy support differ according to the prevailing situation in the recipient country—ranging from the formulation and implementation of development (or industrial) policies to systemic transition to the market economy, emergency crisis response, and others. But, overall, such intellectual cooperation commonly reflects the 'ingredients' approach, with a strong focus on the real-sector economy, field-orientation, and a hands-on approach. If properly implemented, such features and approaches can be conducive to supporting the indigenous policy learning process of developing countries. Lastly, Part III discussed the mega trends of industrial development and their implications.

In the following, we highlight the central messages of this volume and draw implications for the future of industrial policies and Japanese intellectual cooperation.

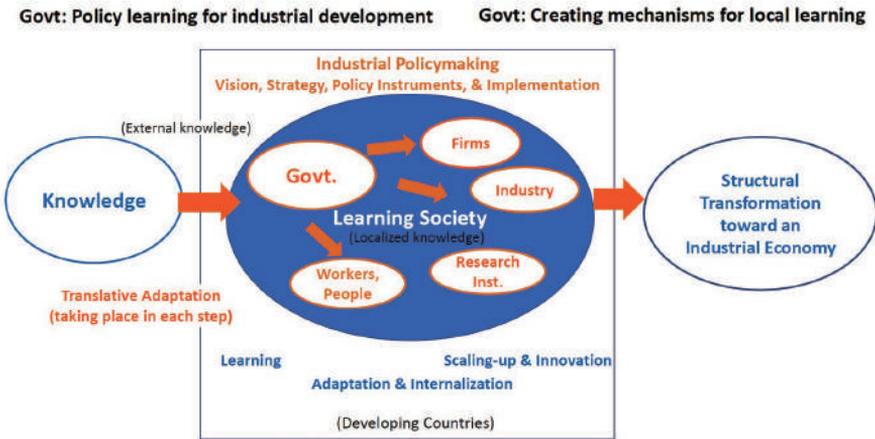
## 2. Industrialization Process through Translative Adaptation

In this volume, we have attempted to examine translative adaptation and local learning in the process of industrial catch-up and their relationships with industrial policies from various aspects. Viewed through a lens of translative adaptation, the process of industrialization must be managed with strong country ownership over policy content, institutions, technology choices, social systems, and values. It is also important that learning and adaptation take place with good understanding of the country's uniqueness and through trial and error processes. The government assumes a key role in this challenging undertaking, and industrial policies are a key building block because they 'create economic policies and structures that enhance both learning and learning spillovers' (Stiglitz and Greenwald 2014, 15).

Translative adaptation, local learning, and industrial policymaking interact in two ways (see Figure 11.1). The first is that the government must be a good learner of industrial policymaking through translative adaptation. When the government of a latecomer country endeavors to establish an overall vision and strategic direction for industrialization and designs industry policy instruments, it inevitably experiences the process of acquiring knowledge and technology from foreign models. It is important that such process be accompanied by indigenous learning with translative adaptation in respective countries. This involves: (i) collecting the information on relevant policies and practices from other countries and analyzing the merits and demerits of each policy option (learning stage); (ii) selecting what policies to adopt and examining their adaptability (adaptation & internalization stage); and (iii) applying the policy nationwide and if successful, even disseminating these experiences to other countries as a policy option (scaling up stage) (Chapter 1, Figure 1.2).

The second way is that the government is responsible for creating policies and institutions for effective local learning so that translative adaptation takes place within the society, including in the private sector. It is important to create an internal mechanism within a country to absorb foreign knowledge, adapt it to the local context and enable scaling up and innovation. This is exactly the role that industrial policy is expected to play. Policy areas include: (i) acquiring knowledge from abroad (such as, opening up trade, foreign direct investment (FDI), and technology

licensing, intellectual property rights); (ii) absorbing knowledge (such as education and training, beyond basic information); and (iii) disseminating and communicating knowledge with wider or targeted population, increasingly with the help of telecommunication technologies (World Bank 1999) (see Chapter 1, Figure 1.3). Ideally, a process of indigenous learning will take place in both the public and private sectors. In this process, public-private partnership is essential because knowledge and information flow in both ways and mutual learning is necessary. As shown in Figure 11.1, the government’s role is critical in supporting the learning of the private sector, especially in the early stage of development where private sector dynamism is weak. As the private sector grows, it will assume a greater role in public-private partnerships including the creation of indigenous and innovative knowledge. For effective policymaking, the government needs to learn from the private sector about the actual situation within industries.



Source: Elaborated by Author.

**Figure 11.1. Role of Industrial Policy through a Lens of Translative Adaptation**

In summary, the government has a dual role in establishing the systemic aspect of learning—as a learner (policy learning) and a facilitator of learning by the private sector (technology learning)—with a thorough understanding of each country’s situation and surrounding external environment. As such, translative adaptation, local learning, and industrial policymaking are inter-dependent and work together.

### **3. Government as Solution and Problem**

The above discussion reminds us of Peter Evans' famous notion of 'the state as problem and solution' in industrial transformation (Evans 1992). Our case studies contain concrete examples of the dual role of the government in the context of industrial policymaking.

#### ***3.1. Creating a learning society through industrial policies***

As shown in Part I, countries have a variety of experiences with the formulation and implementation of industrial policies and the process of indigenous learning during industrial catch-up (Chapters 2-5). The scope of industrial policy, target industries, institutional arrangements, and a mix of policy instruments adopted differ among countries (e.g., steel industries in Japan, Korea, and Brazil, and natural resource-based industries in Malaysia, Brazil, and Chile), but the case studies confirm that industrial policies overall have contributed to the structural transformation of their economies.

As Chapter 2 concludes, the development of these industries was not achieved in a *laissez-faire* market. In all cases, vertical (or selective) policies have been applied, in addition to horizontal (or neutral) policies applicable to all industrial sectors. Public-private collaboration has been key to enhancing the societal capacity for local learning. In the countries studied, partnerships between the government, firms, their associations, research institutions, and other stakeholders have contributed to promoting indigenous learning, adaptation, and innovation. In this way, industrial policies played important roles in creating organizations and incentives and supporting research and development (R&D).

Japan and Korea are exemplary countries that have successfully developed basic industries (such as steel and automobile) through collaborative efforts by the government and private sector. The government took initiatives to formulate industry-specific plans and promotional measures, for example, steel industry rationalization plans and temporary measures for the promotion of the machinery industry in Japan, the Heavy and Chemical Industry (HCI) drive, a development plan for the Pohang Iron and Steel Company (POSCO), and long-term plan for automotive industry development in Korea. In response, the private sector made significant efforts to learn foreign technologies, and subsequently adapt

and improve them. Furthermore, as in the case of Japanese automotive industry including supporting industries, innovative efforts were made locally to introduce Japanese-style management methods to improve quality and productivity such as Total Quality Management (TQM), the Toyota Production System (TPS), and another system known as *Kaizen* approach.

In Latin America, the cases of Brazil and Chile are good examples of governments implementing respective industrial policies through translative adaptation. They have learned from various foreign models, but their industrial policies have been adapted to their actual environment, where East Asia's Flying Geese pattern of development is unlikely. While the experiences of Brazil's industrial policies are mixed, there are some brilliant success stories within the manufacturing (e.g., steel, airplane, pulp, and aluminum) and agriculture/agroindustry (e.g., grains and meats) sectors, as the analyses of Chapters 2 and 3 show. Chile has generally accepted neoliberal economic policies based on the Washington Consensus, but secured policy space to develop its own industrial policies such as the promotion of salmon farming and processing technologies.

For industrial policy to work effectively, it is vitally important that the government create core institutions charged with industrial policymaking, which take a deep interest in understanding the reality of industries and in close interaction with the private sector and other stakeholders. In post-war Japan, the Ministry of International Trade and Industry (MITI) acted as a super ministry for industrial policymaking, with broad mandate over trade, industry, domestic market, environment, and SMEs, which are often fragmented in developing countries, and assumed the responsibility for both horizontal and vertical policies. The MITI formulated and implemented industrial policies in partnership with business. Various instruments—formal to informal—were mobilized, and industry associations also provided communication and network space (Chapter 4). In Brazil, the National Economic and Social Development Bank (BNDES) has played a critical role as an executive organ of industrial policy. It coordinated with political leadership that provides vision and priority setting, as well as external actors that possess technologies and provide markets in the international sphere. Through close dialogue with the business sector, BNDES possesses the information on their actual situations and needs. It translated political vision, facilitated the introduction of technology, and concretized industrial policy instruments

by coordinating with various ministries in the government (Chapter 3). The role of BNDES as an industry-friendly intermediation for learning and investment is also noted by Cimoli et al. (2008).

### **3.2. Learning as a dynamic process**

The above examples demonstrate governments adopting a proactive role in creating a learning society, particularly supporting private sector development, through industrial policy. This is a positive aspect of government—as a solution provider in the industrial catch-up process. But, we should also recognize its weak aspect—the government as problem. The reality in developing countries reveals that not a few governments suffer from low capacity for policy design and implementation. This is one of the reasons why scholars and neoclassical economists, particularly in the 1980s-early 1990s, offered cautious assessments of industrial policy (Kruger 1974) when full-fledged structural adjustment programs were implemented.

Subsequently, the *East Asian Miracle: Economic Growth and Public Policy* (World Bank 1993) and *The World Development Report 1997: The State in a Changing World* (World Bank 1997) somehow shifted the negative tone against industrial policies and recognized their effectiveness under certain conditions, based on the experience of high-performing East Asian economies. Yet, these reports remain cautious, stating that it is difficult to apply these policies with poor institutional capacity. The ‘two-part strategy’ proposed by WDR 1997 called for matching the state’s role to its capability. While this strategy does not categorically deny the use of industrial policies in developing countries, its practical implications are that the governments of developing countries with low institutional capacity should focus on getting the fundamentals rights (i.e., the provision of public goods and other intermediate services to correct market failures) without performing high-level interventions (Ohno 2013a). Consequently, the two-part strategy is substantially similar to previous ones, including the arguments presented by the *East Asian Miracle* (World Bank 1993).

In this light, the case study of Meiji Japan (Chapter 5) shows that learning is a dynamic process and that the capability of industrial policymaking can be enhanced progressively. Meiji leaders had a keen interest in industrialization in general and the state of industries and were eager to learn from foreign countries to catch-up. After repeated trial and error

over industrialization efforts, Meiji leaders finally came to formulate a vision for industrialization that is based on the reality of the industrial sector and reflects the views of industrial entrepreneurs into policymaking practices. The core institution charged with industrialization also evolved over the period of nearly 30 years—from the Ministry of Engineering to the Ministry of Home Affairs, and then to the Ministry of Agriculture and Commerce. As the government enhanced its capability to analyze the reality of the industrial sector and accumulate industrial knowledge and skill, and as the private sector grew, interactive communication between the government and private sector expanded and deepened. This in turn contributed to enhancing the process of industrialization vision formulation and policymaking practices. These practices were inherited to the MITI (Chapter 4).

Because learning is a dynamic and progressive process, we have emphasized the importance of policy learning for industrialization. Instead of rejecting outright the possibility that developing countries adopt industrial policy, Part I of this volume provided various case studies related to the policy content and methodology for designing and implementing industrial policy. It is important to strengthen the government's policy capacity in promoting industrialization rather than reducing the scope of its intervention.

### ***3.3. What is to be learned?***

Our case studies also suggest that there are several aspects critical to successful policy learning by the governments of latecomer countries. Key policymakers must have a strong interest in industrialization in general and in specific industries, make efforts to accumulate industrial knowledge and skills within the government, and have a good understanding of the reality of industrial entrepreneurs and sensitivity to economic rationality. These essential attitude-aspects must be learned to make the process of industrial policymaking and implementation realistic.

More specifically, the government needs to foster a sense of economic rationality in the formulation and implementation of industrial policy. As our analysis of successful cases show, BNDES in Brazil and MITI in post-World War II Japan have given due consideration to economic rationality in the process of industrial policymaking and implementation. In this regard, it is important for policy makers to have a general interest

in and passion for industrialization and strive to accumulate industrial knowledge and skill within the government (Chapters 2, 3, and 4). Such efforts toward indigenous learning would involve trial and error processes and take a long time. Whether the government can manage the industrialization process properly with realistic goals and targets during such a long gestational period significantly affects the outcome of industrialization. In parallel, the government must pay attention to macroeconomic variables and make necessary adjustments if there are signals that its industrialization plan is too ambitious to sustain macroeconomic stability. Otherwise, the country would suffer from negative economic consequences especially if massive public investments in industrialization were to be made in an inefficient manner (Chapter 4).

#### **4. Dynamic Capacity Development and the Role of Development Policy Support**

The government of Meiji Japan (1868-1912) proactively learned from abroad by inviting foreign advisers and sending study missions overseas, and enhanced its policy and technical capacity progressively. In those days, no donor countries or international organizations had provided support to latecomer countries to acquire knowledge or technology. It was also the age of imperialism and colonialism. So, the Meiji government had no way but exercise its own initiative.

Today, the world is quite different. Developing countries have ample opportunities to acquire advanced knowledge and technologies from abroad, through development cooperation, FDI, and other channels. This suggests that it is all the more important for latecomer countries to be mindful of translative adaptation and indigenous learning so that the advanced knowledge and information obtained can be validated and adapted to the country-specific context and diffused at scale. This also implies that external partners, particularly donor countries and agencies must ensure that development cooperation be conducive to translative adaptation and local learning within partner countries.

##### ***4.1. Rethinking development cooperation toward effective local learning***

How, then, can donors assist in partner countries' capacity development for learning to industrialize?

This volume's message is that donors must duly respect key ingredients of translative adaptation—including country-specific uniqueness, strong country ownership, and process-orientation with room for trial and error—when providing development cooperation. There is already much literature and frequent discussions within the international community on the importance of country ownership and the need to reject a one-size-fits all approach, and it is fair to say that there is an established global consensus on development effectiveness (OECD 2005). But, these discussions largely focused on public financial management and the use of partner country systems, and alignment of donor support with development priorities, which can be viewed as the 'framework' approach. Furthermore, their attention (at least, in the early 2000s) focused on the public-expenditure intensive social sectors, as emphasized by the papers on poverty reduction strategies introduced by the World Bank and the International Monetary Fund (IMF) as part of the Enhanced Heavily Indebted Poor Countries (HIPC) initiative. Productive sectors received limited attention. Neither has attention been paid to how development cooperation can support policy capability for industrialization. While this may be partly because of ideological polarization, the reality is that unlike Japan or Korea, only a few Western donors have catch-up experiences to share with developing countries. These suggest that it is important to consider the practical aspects of industrial policy support and the role of Japanese intellectual cooperation.

In this volume, we argued that dynamic capacity development is a promising approach to enhancing the government's capacity for industrial policymaking (Chapter 1). Building on real-sector concern ('ingredients' approach), field-orientation, and joint work, this approach could facilitate the process of learning and translative adaptation. The case studies in Part II show that Japanese development policy support is one method for supporting dynamic capacity development of partner countries, particularly policy learning for industrialization. Case studies of Latin America ('Okita Report' for Argentina, The Study on Economic Development of Paraguay (EDEP)), Vietnam (Ishikawa Project), Ethiopia (industrial policy dialogue), and Thailand (Mizutani Plan and related industrial cooperation) share common characteristics of Japanese development thinking and practices, such as real sector concern, long-term perspectives, and a hands-on approach to promote the process of local learning.

A hands-on approach emphasizes the sharing of context-specific, tacit knowledge and interactive communications with counterparts (Chapter 6). In most of the case studies, the sharing of knowledge and interactive communications was extended beyond direct counterparts to scholars, the private sector, industry associations, and research institutes. For such an approach to work, certain prerequisites must be satisfied on both the donor and partner country sides. Partner countries must be ready to listen to external voices and make a high-level commitment to development policy support. Industrial policy is comprehensive, and the engagement of national leaders is essential.

#### ***4.2. Variations in development policy support***

The Okita Report for Argentina (1986-87) is the first large-scale intellectual cooperation Japan provided. Its policy recommendations reflect the economic thoughts of Okita, an architect of Japanese post-war economic recovery programs, such as long-term perspectives (e.g., scheduled trade liberalization), the importance of industrial development, and public-private partnerships. EDEP (1998-2000) paid due attention to the situation specific to Paraguay and proposed a strategy for a cluster of agro-industrial chains, consisting of soybeans, maize, and other commodities to enhance the country's competitiveness. The Ishikawa Project of Vietnam (1995-2001) was requested by Vietnamese leaders who sought advice from Ishikawa, who had profound knowledge of Chinese development (which took a 'gradualist' approach to market-oriented reforms) as an alternative to 'big bang' reforms to market-oriented economies adopted by Russia and many East European countries in the early 1990s. Taking the form of joint research between Vietnam and Japan, Ishikawa gave special importance to building trust with the Vietnamese side, respected their policy ownership by giving policy options, and emphasized the learning process. Ethiopia-Japan industrial policy dialogue (2009-present), Japan's first case of intellectual industrial cooperation in Africa, started with a request by the Prime Minister who was eager to learn from the East Asian development experience. It has emphasized mutual trust and dialogues with national leaders and key policymakers. It is also process-oriented, with the efforts to reflect Ethiopian ownership over the choice of dialogue topics and to follow up policy recommendations with Ethiopian policy action and Japanese industrial cooperation. In this way, Ethiopia-Japan industrial policy dialogue has taken hands-on approach, placing a strong emphasis on the policy learning process.

While sharing common characteristics, Japanese development policy support takes a customized approach. It is designed and implemented in a given context of particular partner countries, which differ significantly according to the development stage of their market economy, internal and external circumstances, and their governments' policy capacity. Aid schemes depend on individual cases. There is no standardized method or fixed format for this type of intellectual cooperation.

Among the four case studies, industrial policy support to Thailand (1999) has a distinctive feature. Because this support was provided as a response to the Asian financial crisis, the duration of advisory work was relatively short compared to the other Japanese policy support programs. It has also been provided in close partnership with Japanese companies. Yet, its advice included a long-term perspective on Thailand's industrialization such as automotive industry development. One suggestive point is the role played by local industrial organizations in adapting the Japanese model of *Shindan-shi* (SME management consultant) and disseminating its practices to local private sector. Thanks to long-standing economic cooperation between Thailand and Japan, these local industrial organizations have acquired industrial technologies from Japan and shared them with the Thai private sector, acting as an intermediary. It is fair to say that they have contributed to the local learning and translative adaptation process.

It should be noted that the four case studies analyzed in this volume are 'flagship' projects among Japanese intellectual cooperation, which were/have been implemented with the mobilization of relatively large resources (e.g., budget and staffing). Also, the strong political commitment of partner countries is necessary for serious and durable dialogues. So, unlike conventional technical cooperation projects, development policy support cannot be conducted in a large number of countries. At the same time, there are practices that differ from such large-scale development policy support: the Japan International Cooperation Agency (JICA) dispatches a number of long-term policy advisors from various sectors to the governments of developing countries (Hashimoto 2007) and their perspectives and approaches to economic development are quite similar to those discussed in this volume.

## 5. The Way Forward: Industrialization Challenges and Implications for Japan's Development Policy Support

As Chapter 10 discussed, the shape of industrialization is rapidly changing in the 21st century, with the expansion of global value chains (GVCs), the digital revolution, and Industry 4.0. There is a drive toward realizing inclusive and sustainable industrial development as embraced in the Sustainable Development Goals (SDGs). The COVID-19 crisis also confirms an important role that industry plays in enhancing economic and social resilience and 'building back better' recovery in the post-pandemic era. These mega trends offer opportunities for developing countries to intensify industrialization. It is important for developing countries to take advantage of such emerging opportunities and move forward, with sufficient understanding of the challenges ahead. This final section discusses industrialization challenges in today's context and considers implications for Japan's intellectual cooperation including policy support to industrial development.

### 5.1. *Striking a balance between old and new challenges*

Currently, active discussions are underway around whether and how the restructuring of global production networks might take place as a result of the COVID-19 crisis and other factors. It is possible that the COVID-19 pandemic and prevailing geopolitical tension (trade frictions between the United States and China), together with rising costs of Chinese labor, provide potential opportunities for developing countries to capture diversifying FDI. Such FDI may include green, climate-resilient, future-proof, and sustainable sectors.

On the positive side, certainly there are broadened opportunities for developing countries to industrialize. Because 'industrialization can happen stage by stage in global value chains (rather than sector by sector)' (Baldwin 2016, 278), developing countries do not have to prepare a 'full-set' industrial base. Neither do they have to worry about the sequencing of which industry to start with. The digital revolution may also provide an opportunity for developing countries to 'bypass traditional stages of development to either jump directly to the latest technologies (stage-skipping) or explore an alternative path of technological development (path-creating)' (Yayboke and Carter 2020).

Nevertheless, we should not forget that old problems continue to exist. The nature of development challenges has not changed fundamentally. Our analysis of the World Bank's income classification data on 193 countries (UN member states) during the period of 1987-2019 where historical data are available<sup>1</sup> found that many countries moved up the World Bank's income ladder over the recent three decades and that now, more countries belong to the upper middle- and high-income categories (see Table 11.1, Figure 11.2). But, the more careful analysis reveals the following three issues.

First, Africa continues to face the challenge of the 'low-income trap.' The number of countries in the low-income category declined from 49 to 29 over the past 32 years (after a peak of 66 in 2001<sup>2</sup>), of which 23 are Sub-Saharan African countries. Moreover, 22 countries have never moved up to the lower-middle income category, and 20 of them belong to Sub-Saharan Africa. This means that African development remains a long-standing challenge.

Second, the number of countries in the middle-income categories, particularly the upper-middle income category increased from 24 to 54 over the past 32 years. China and Indonesia are two notable countries which jumped up from the low- to the upper-middle income category. At the same time, there are quite a few countries which move up and down between income categories (Figure 11.2). For example, Russia and Argentina (currently, upper middle-income countries) fluctuate between the lower-and upper-middle income categories. The oil-rich countries of Angola and Venezuela (respectively, lower-middle income and upper-middle income countries), move between low to upper-middle income categories. Algeria, another oil-rich country (currently a low-income country), fluctuates between the low- and lower-middle income categories.

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<sup>1</sup> For operational lending purposes, the World Bank classifies economies into four income grouping: low, lower-middle, upper-middle, and high. Income is measured using gross national income (GNI) per capita, in US dollars, based on Atlas methodology. The World Bank has historical data from 1987 to 2019 (see <https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries>). For example, thresholds of 2019 are: (i) 1,035 US dollars and less for low-income countries; (ii) 1,036 to 4,045 US dollars for lower-middle income countries; (iii) 4,046 to 12,535 US dollars for upper-middle countries; and (iv) 12,535 US dollars and above for high income countries.

<sup>2</sup> The high number in the mid-1990s-early 2000s is largely associated with serious external debt problems, which developed into the HIPC (debt relief) initiative by the international community.

Third, the number of countries in the high-income category doubled from 30 to 61 during 1987-2019. This category consists of three heterogeneous countries: (i) traditional advanced countries that joined the Organisation for Economic Co-operation and Development (OECD) before 1987; (ii) oil-rich countries (e.g., Kuwait, Qatar, United Arab Emirates); and (iii) emerging economies. While the former two had already achieved high-income status at an early stage, the latter (iii) countries have newly joined this category, coming from diverse regions<sup>3</sup> including Eastern Europe, which experienced a transition to the market economy in the 1990s (see Table 11.1). Such a rise of emerging economies is encouraging development. But, we should also note that Singapore, South Korea, and Israel are the only countries that have caught up with the advanced countries during the past three decades, if we use the very high-income threshold of 25,000 US dollars (twice as high as the World Bank's high-income threshold<sup>4</sup>). This implies that only a handful of countries have rapidly caught up to become leading countries, despite an increase in the number of high-income countries. Technological upgrading and value creation remain an important challenge for other emerging economies.

**Table 11.1. World Bank Income Classification (Number)**

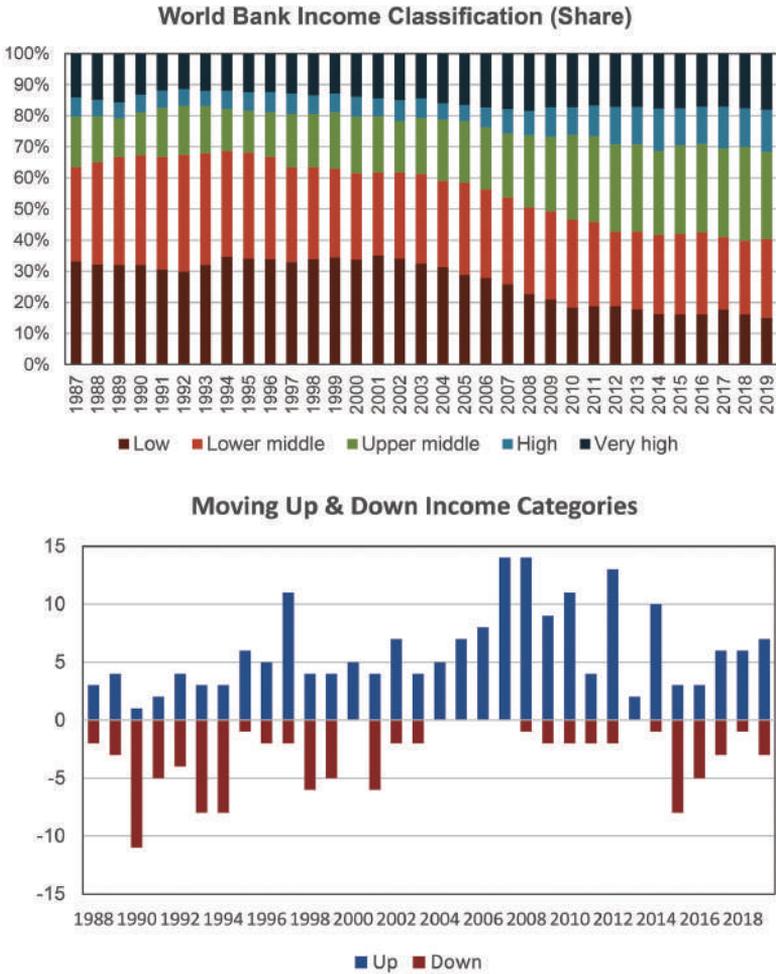
Income Category	1987	2001	2019	Regional Composition (Number in 2019)
Low income country (LIC)	49	66	29	East Asia & Pacific: 1, Central Asia: 1, South Asia: 1, Middle East: 2, Sub-Saharan Africa: 23, LAC: 1
Lower middle income country (LMIC)	45	50	49	East Asia & Pacific: 12, South Asia: 6, Middle East: 5, Sub-Saharan Africa: 18, LAC: 4, Europe: 4
Upper middle income country (UMIC)	24	34	54	East Asia & Pacific: 9, South Asia: 1, Middle East: 5, Sub-Saharan Africa: 5, LAC: 20, Europe: 14
High income country (HIC)	30	38	61	East Asia & Pacific: 8, Middle East: 8, Sub-Saharan Africa: 2, LAC: 8, North America: 2, Europe: 33
<b>Total</b>	148	188	193	

Source: Calculated by Author, based on the World Bank income classification data.

<https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries>.

<sup>3</sup> Such emerging economies include Singapore, South Korea (East Asia); Czech Republic, Estonia, Lithuania, Poland, Romania, Slovak Republic, Slovenia (Eastern Europe); Chile, Panama, Uruguay (Latin America) and a few Caribbean countries, Mauritius, and Seychelles (Sub-Saharan Africa).

<sup>4</sup> Since the World Bank's high-income category is broad and includes countries with per capita GNI 12,500- 85,000 US dollars or more, we have hypothetically created the US dollar 25,000 threshold for the very high-income category.



Note: UN member states only.

Source: Calculated by Author, based on the World Bank income classification data.

**Figure 11.2. Analysis of World Bank Income Classification Data**

This reality reveals that there exist ‘development traps’ regardless of income levels. Here, the role of manufacturing cannot be overstated because the above-mentioned rapidly rising economies (such as Singapore, South Korea, China, and Indonesia) have achieved industrialization driven by manufacturing. Meanwhile, a question remains whether today’s latecomer countries represented by Sub-Saharan African countries follow the same East Asian path of industrialization or not. The signs of deindustrialization

and servicification are observed in those countries. Digitalization might bring about a leapfrog opportunities for latecomers, but country-specific solutions must be designed and implemented (Chapter 10).

Therefore, developing countries need to cope with both new and old challenges. As Baldwin (2016) states, the new landscape may change the nature of the ‘master plan’ of industrialization. But, having the right ‘master plan’ is one thing, and its effective implementation is another task.

Global value chains are not magical. They open a new way to industrialize, but they do not solve the hardest development problems. Successful development requires a broad array of social, political, and economic reforms that are as difficult now as they ever were. (Baldwin 2016, 278)

We would like to add that the new ‘master plan’ needs to be properly formulated, with good understanding of the prevailing economic situations, needs of the business sector, and international environment. Proper institutional settings must be installed to undertake such tasks, and strong political commitment to industrial upgrading is essential. These are common, old challenges, which must be addressed by any developing countries aspiring for industrial catch-up. Those aspiring and willing developing countries should acquire core policy capability for effective industrial policymaking by learning from the others, as we have argued in this volume.

Certainly, the new landscape of industrial development requires adapting prioritization, aligning the choices of industry and technologies to the emerging opportunities and changing environments. But, the methodology for industrial policy formulation and implementation, such as real-sector concern, the role of agencies tasked with industrial policy, and close partnership with the private sector, must be commonly learned and acquired. In other words, the ‘ingredients’ approach remains valid to tackle the common problems of industrial development—regardless of ‘a particular age, society and international environment’ (Ohno 2013b, 25).

## ***5.2. Translative adaptation in today’s context***

For today’s developing countries, the lens of translative adaptation is becoming more important than ever. In an inter-connected world,

developing countries are required to exercise more sophisticated capabilities under strong country ownership. Problems are getting more complex and comprehensive. Now that new knowledge and technologies are available more easily and quickly in a standardized format, it is all the more necessary for developing countries to actively and effectively learn to industrialize. This means collecting knowledge and information on available policy options by learning from the experiences of other countries, selectively adopting and adapting them to country-specific situations, and also taking account of the current global environment.

Industrial policymaking in the post-pandemic world requires enhanced government capacity, which was required in the past but has become more important under the current crisis. This includes taking advantage of a new policy scope including digitalization, speed in policy making, and clear instructions and implementation of actions. Furthermore, in the post-pandemic world, industrialization requires a greater emphasis on sustainability, inclusiveness, and resilience. These also necessitate a nationally integrated approach to address complex challenges instead of separate ministerial actions.

Moreover, translative adaptation is needed for Japan. Japan itself must make conscious efforts to adapt and innovate its approaches to the current dynamically changing environment. This includes the need to adapt to the post-COVID-19 world and to a changing role of Japan in the Asian and world economy, and regional and global production networks.

While the importance of Asia in the global economy has increased significantly, Japan's share in the Asian economy has decreased over the recent decades. In the 20th century, Japan was virtually a driving force of the Asian economy, as the front-runner of the Flying Geese. But, in the 21st century, other Asian countries have increased their presence as economic powers and investors. The era in which Japan dominantly led the Asian economy has come to an end (Goto 2019).<sup>5</sup> And importantly,

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<sup>5</sup> For example, the share of Asia in global GDP increased from 10 per cent in 1968 to 28 per cent in 2018. The share of Japan in Asian GDP peaked at 78 per cent in 1988 and fell to 21 per cent in 2018. Asia's presence as an investor has significantly increased. In 1980, Europe accounted for 48 per cent of global outward FDI, followed by North America (38 per cent); Asia accounted for only 10 per cent of global FDI (of which 80 per cent was Japanese FDI). By 2017, Europe and Asia became nearly equal top investors, accounting for 33 per cent and 32 per cent of global outward FDI respectively, followed by North America (24 per cent) (Goto 2019).

Asian companies have come to lead the value chain by building new comparative advantages, as was the case of Malaysia leading worldwide R&D and innovation in the palm oil industry (see Chapter 2). These changes suggest that Japan may wish to participate in the value chain led by Asian local companies in a way that takes advantage of Japan's strengths.

### ***5.3. Implications for Japan's development policy support***

What do all these changes mean for Japanese intellectual cooperation, especially policy support for industrial development?

First, Japanese perspectives on industrial development, based on the 'ingredients' approach and long-term perspective, continue to be valid and important. As we discussed, in a contemporary world, developing countries can consider industrial policy options more broadly, with attention to interplays among the emerging mega trends. The scope of the master plan may change (Baldwin 2016), but the government must possess core policy capability so that the new master plan can be formulated properly. This requires listening to the voices of the private sector, collecting data and information on firm activities, with deep knowledge of key industries. These are the essence of the 'ingredients' approach which Japanese development cooperation has placed high importance for long.

Second, knowledge sharing of industrialization experiences should be promoted among those countries interested—from a perspective of translative adaptation. As we have shown, the paths to industrialization are diverse, and various experiences have been accumulated over the past decades within and beyond East Asia. Here, what matters most are the practical aspects of industrial policymaking, especially the methodology for industrial policy formulation and implementation, rather than the simple replication of a particular development model. It is also important to promote knowledge and experience sharing of the recent industrializers—those countries that have succeeded in industrialization not long ago—in light of how they learned from other countries and 'adopted and adapted' foreign models suitable to their respective countries.

Third, Japan should be actively engaged in promoting knowledge sharing and learning of industrialization experiences among the recent

industrializers and developing countries, and acting as a facilitator of local learning and translative adaptation. Japan has fostered the ‘ingredients’ approach, field-orientation, and joint work (or hands-on approach) through its long-standing development cooperation including policy support. These are the key ingredients of a dynamic capacity development approach. It is important that such approaches, together with a perspective of translative adaptation, be fully incorporated in the process of knowledge sharing and learning of industrialization experiences. In reality, these approaches and perspectives are implicitly understood and practiced by Japanese experts and professionals engaged in development cooperation. But, they tend to remain as tacit knowledge. Japan must make more efforts to convert tacit knowledge into explicit knowledge so that these approaches and perspectives can be better understood by other countries.

Fourth, Japan should make greater efforts to publicize and disseminate its experiences with development policy support, particularly the approaches and perspectives adopted in industrial policymaking. As discussed earlier, because of its customized approach, there is no standardized method and aid scheme for Japanese development policy support to be implemented. As a result, while individual projects may be known among those concerned circles, this type of intellectual cooperation as a whole has relatively low visibility within Japan and abroad. This is quite different from the initiatives of several countries such as the Knowledge Sharing Program (KSP) offered by Korea<sup>6</sup> and the Knowledge Bank based on Norway’s experience with managing oil for development.<sup>7</sup> The compilation of this volume is our modest effort to raise the visibility of Japanese development policy support and disseminate its approaches, as one way to facilitate the process of local learning and translative adaptation by partner countries.

Lastly, it is increasingly important to emphasize the process of ‘co-creation’ when Japan undertakes development policy support for

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<sup>6</sup> KSP is managed by the Korean Development Institute, aimed at sharing knowledge with partner countries with Korean development experiences. <https://www.ksp.go.kr/english/index>.

<sup>7</sup> In 2018, the Norwegian government established the Knowledge Bank in Norad (Norway’s development cooperation agency) to share Norway’s experiences with managing oil for development and other areas (ocean, fish, gender equality, agriculture, digital, etc.) through its technical cooperation program. <https://www.norad.no/en/front/the-knowledge-bank/>.

industrialization. First, Japan must learn together with partners to find joint solutions (co-learning and co-solving). This is because development challenges in the 21st century have become more complex, sometimes going beyond what Japan experienced in the past through its own industrial development. Leapfrog technologies may be more advanced and easily tested in developing countries. Second, it is important for Japan to build intellectual networks with the other industrializers systematically so that their relevant experiences can be shared with developing countries when it conducts development policy support. In this process, Japan may wish to play a facilitating role so that they can take account of translative adaptation perspectives when sharing their industrialization experiences (joint facilitation). Third, it is important that such experiences can be accumulated for further utilization and enhancement of development policy support (experience accumulation). All together, the process of 'co-creation' itself can be viewed as translative adaptation and can contribute to creating new values for development policy support.

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