

Chapter 1

Introducing Foreign Models for Development: A Perspective from Translative Adaptation



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1.1 Introduction

Learning foreign knowledge and technology is essential for industrial catch-up by latecomer countries and their homegrown development. Acquiring and assimilating knowledge, skills, and technology that are widely known and practiced in the more advanced economies—which we call ‘foreign models’—is extremely important and form the core of learning that latecomer countries must do [48]. About 150 years ago, the government of Meiji Japan (1868–1912) aggressively learned from abroad by sending study missions and inviting foreign advisers to make up for the knowledge and technology gap that had widened as a result of two centuries of national isolation during the Tokugawa shogunate era. At that time, no donor countries, or international organizations were present to provide support to latecomer countries in their acquisition of knowledge and technology. Rather, it was the age of imperialism and colonialism.

Today, developing countries entertain plentiful opportunities to access the frontier knowledge and best practices of other countries. There exist a variety of channels of technology transfer including market- and non-market-based ones. Foreign direct investment (FDI), purchase of turnkey plants and machinery, foreign license, and technical services are typical channels of market-based, inter-firm technology transfer, while development cooperation through official development assistance (ODA) is an example of a non-market based one. The international community has also embraced the importance of knowledge as a catalyst for development and has been actively sharing the ‘best practices’ of successful countries through

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donor-funded study tours, seminars, and scholarships to higher education providers,¹ Furthermore, with technological advances, the volume and timeliness of available information have dramatically increased.

Nevertheless, the speed of learning varies significantly among countries. Some countries learn fast while others do not, creating a divergence in the progress of economic development. As our recent analysis of the World Bank's income classification data show, although the number of middle-income countries has increased, only a handful had rapidly caught up to become leading high-income countries between 1987 and 2019 [42].² The analysis also reveals the long-standing challenge of African development. 23 of the 29 low-income countries are in Sub-Saharan Africa, and 20 of them have never moved up to the lower-middle income category over the past 30 years. Other recent research suggests that there has been an overall downward trend in the economic transformation of African countries during 2000–2019, with the shrinking role of manufacturing in favor of services and extractive industries and with poor productivity performance in the context of limited structural change [2]. Avoiding middle-income traps, overcoming premature de-industrialization, and achieving economic transformation in Africa remain a priority development agenda.

Transfer of knowledge and technology does not occur naturally from advanced to developing countries even in the age of globalization where information, finance, goods, and services flow freely on a global scale. This requires serious learning by local actors including policymakers, private sector, and the society, to study and internalize foreign knowledge and technology and adapt them to fit the reality of the recipient countries. We call this process *translative adaptation*, and we believe it is at the core of learning foreign models for development. How can developing countries effectively learn from foreign models and introduce them wisely for their

¹ Both multilateral and bilateral donors are giving importance to knowledge management and sharing activities. For example, the World Bank positions itself as a 'Knowledge Bank' of best practices within the field of development. Among bilateral donors, South Korea is actively engaged in the Knowledge Sharing Program through the Korean Development Institute (KDI) to share Korean development experiences with developing countries. Germany puts a high priority on supporting technical and vocational education and training (TVET) system in developing countries, based on its own experience. Norway (Norad) runs the Knowledge Bank to share its experience with managing oil for development. More recently, China established in 2017 the Center for International Knowledge on Development (CIKD) to communicate China's development knowledge. As for Japan, apart from policy dialogues (Chap. 5 of this book), the Japan International Cooperation Agency (JICA) has established a JICA Chair of Japanese Studies with leading universities in partner countries, and the JICA Development Studies Program (JICA-DSP) which invites future leaders in partner countries to Japan to learn about Japan's modernization and development experiences.

² Our analysis shows that despite an overall increase in the number of high-income countries during this period, Singapore, South Korea, and Israel are the only ones that caught up with the advanced countries during 1987–2019, if we use the very high-income threshold. Since the World Bank's high-income category is broad and includes countries with per capita GNI 12,500–85,000 USD or more, we have hypothetically created the USD 25,000 threshold for the very high-income category. The number of high-income countries based on the World Bank's income threshold increased from 30 (1987) to 61 (2019); but this is largely because of the participation of Eastern European economies in this category, after experiencing transition to the market economy. The total number of countries for World Bank income classification also increased from 148 (1987) to 193 (2019).

homegrown development? What is the role of development cooperation in facilitating their proactive learning process? These are key questions we would like to address in this book.

A rich body of literature highlight the centrality of learning, the importance of local learning, and a dual role of the government as a policy learner and a facilitator of societal learning through industrial policies [13, 42, 51, 58]. As such, policy capacity and societal learning are increasingly stressed as pre-conditions for successful catch-up. But it remains to be understood how latecomer countries can build internal mechanisms for such learning and create localized, new knowledge, through interactions with foreign models. While ample studies exist on market-based (firm-level) technology transfer [25, 38, 59, 60], few studies focus on the concrete *how* aspects of learning, especially policy learning by the government and the role of development cooperation. This book attempts to answer such pragmatic question from the perspective of Japan's past experience and its extensive industrial development cooperation in Asia, Latin America, and Africa.

The book 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 [42]. 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 [58], and (ii) Maegawa's theory of *translative adaptation* [29, 30], which stresses the indigenous perspective of a latecomer society and the local learning process it undertakes. Translative adaptation involves selectively adopting and adapting foreign knowledge and technologies to the specific conditions of the home society under the strong influence of dominant global trends. We apply this concept to the context of industrial catch-up and development cooperation. We also ask how this learning method should—or should not—be revised under the new landscape of industrialization as featured by digitalization and the Sustainable Development Goals (SDGs).

For three reasons, we believe that Japan can make useful intellectual contributions to the industrialization of developing countries by sharing its experiences of catch-up and development cooperation. First, Japan is the first non-Western industrializer, as the experiences of Meiji modernization and post-World War II economic development show. Based on the country's experiences, Japanese researchers, practitioners, and private sector have fostered distinctive perspectives and approaches to industrial development [40]. These include: (i) the importance of learning and selectively incorporating advanced technologies and knowledge into Japanese culture and systems (translative adaptation), and (ii) real-sector concern with concrete thinking, field (*gemba*) orientation, and close partnership between government and the private sector. Second, such historical experience of Japan stimulated neighboring countries and generated a chain reaction of learning in East Asia. Third, such perspectives have been strongly reflected in Japanese industrial development cooperation. Japanese researchers and aid practitioners have been deeply engaged in supporting the industrialization of developing countries for many decades, typically through intellectual

cooperation (including industrial policy dialogue), human resource development, and quality and productivity improvement.

As an overview to the entire book, this chapter introduces key concepts and analytical frameworks such as translative adaptation and local learning, policy and societal learning, and highlights the vital importance of learning foreign models for industrial catch-up, with strong country ownership and local adaptation (Sect. 1.2). It then revisits Japanese experiences of industrial development and development cooperation from this perspective and reviews the industrialization experiences of East Asia where the region-wide diffusion of learning took place (Sect. 1.3). The chapter also presents the approach and structure of this book (Sect. 1.4), as well as the summary of key findings emerging from the subsequent chapters and their implications in the age of new technology (Sect. 1.5).

1.2 Key Concepts and Analytical Frameworks

Development is an interactive process incorporating both ‘foreign’ and ‘indigenous’ elements [19, 47]. On the one hand, latecomer countries face the need to acquire the ‘foreign’ elements—such as modern technology, knowledge, and organizational structure—in such forms as aid, trade, and investment by the private sector. On the other hand, each country has ‘indigenous’ elements—such as values and social institutions unique to that country—that regulate and determine the effectiveness of imported items because the ‘economy is embedded in society’ ([52], p. 57). It is often the case that a dominant foreign system imposes its norms and rules on a local society and that the latter may be forced to accept them in the face of external pressure.

International transfer of knowledge and technology—especially from advanced to developing countries—is a typical case of this systemic interaction. For example, technology transfer through development cooperation has characteristics of intentional transplantation of foreign technology under asymmetric power balance between ‘donors’ (outsiders) and ‘recipients’ (insiders) [22]. The outsiders tend to bring their past success models, while the insiders have less knowledge, technical and financial capability to propose alternative models even if they foresee challenges of applying the foreign models into their local context.

Furthermore, foreign knowledge and technology cannot be bought ‘off-the-shelf’ because improvement requires their internalization by local people. On this point, Kenichi Ohno stresses in his book, *Learning to Industrialize: From Given Growth to Policy-Aided Value Creation*, that ‘[w]hat is critically needed for latecomer countries is systematic and pragmatic learning of alternative international best practices for the purpose of enhancing the capacity to create their own policy packages’ ([48], p. 54).

These underscore the need for developing countries to build an internal mechanism that continuously absorbs external knowledge and adapts to the local context, so that they can design and implement homegrown development strategies. We should

give more attention to how to develop the government's capacity for industrial policymaking, as well as private sector's response capacity, instead of using capacity constraints as an excuse for denying industrial policy. To this end, we have developed analytical frameworks by synthesizing Maegawa's theory of translative adaptation and Stiglitz's knowledge-centered development thinking toward an industrialized economy. We recommend translative adaptation—learning and modifying foreign models to create an enhanced local model—as an essential approach for latecomer countries to realize homegrown development.

1.2.1 *Translative Adaptation and Local Learning*

1.2.1.1 Translative Adaptation as Dynamic Interaction Between Foreign and Local Systems

Translative adaptation is the concept presented by Keiji Maegawa, Japanese economic anthropologist, referring to the process of systemic merger and the resultant dynamic interaction between a dominant foreign system and a local society [29, 30]. As cited below, it is about the adaptive acceptance of advanced systems and new culture by latecomer countries—often introduced from abroad through foreign aid and globalization—in the process of modernization. In this process, dynamic interaction between foreign and local systems takes place, where foreign elements can be reinterpreted and adjusted to the existing value structure and local institutions.

[M]any nations and societies have adopted Western institutions and objects from without in order to survive (or by their own choice). However, it is important to recognize that they did not accept Western inventions in their original forms. Any item in one culture will change its meaning when transplanted to another culture, as seen widely in ethnography around the world. [...] The essence of what has been called 'modernization' is the adaptive acceptance of Western civilization under the persistent form of the existing culture. That is, actors in the existing system have adapted to the new system by reinterpreting each element of Western culture (i.e., 'civilization') in their own value structure, modifying yet maintaining the existing institutions. I shall call this 'translative adaptation.' (Maegawa [29] English translation, pp. 174–175; underlined by the author)

In the context of development, translative adaptation is the process where latecomer countries undertake global integration with national ownership, with proper selection of the model and management of the process. Maegawa argues that a latecomer society is not really weak or passive if it controls the type, terms, and speed of importation of foreign ideas and technology, using them to stimulate the existing society for new growth. Here, the government plays a critical role in assisting home society to embrace new things and evolve positively. But not all countries can do this. Translative adaptation requires policy skill, knowledge, and national effort under wise national leadership [48]. According to Maegawa, Meiji Japan was a country that succeeded brilliantly in translative adaptation (see Chap. 3). In postwar Japan, the private sector and government made collaborative efforts to form *Kaizen*, through

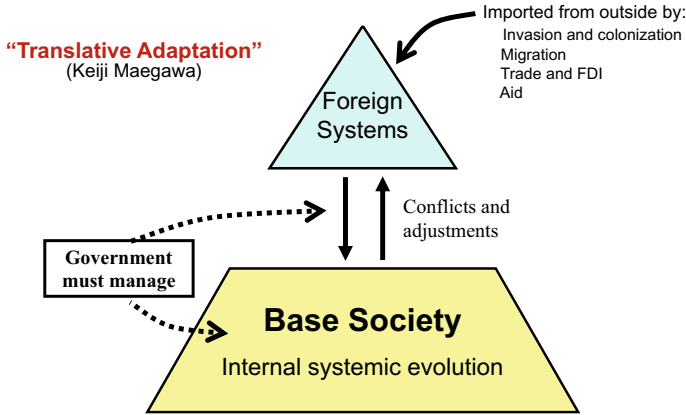


Fig. 1.1 Development process as systemic interaction (*Source* Adapted from Fig. 1.2 in Kenichi Ohno [46], p. 14)

local adaptation of management technologies brought from the United States (US) (see Chaps. 2 and 4). The perspective of Maegawa is illustrated in Fig. 1.1.

Shigeru Ishikawa, a Japanese development economist, shares a similar yet complementary perspective to Maegawa in his research without using the term ‘translative.’ Ishikawa stresses the importance of understanding the initial conditions within respective developing countries, including their stage of market development, and suggests the need to foster the will and capability within these countries to ‘adapt’ policy prescriptions advised by foreign donors to local reality [16]. He emphasizes the critical role of the government in this undertaking. As will be explained below, Ishikawa made important contributions in providing intellectual support to China and Vietnam for their transition to a market economy.

1.2.1.2 Importance of Local Learning

Maegawa’s anthropological perspective also provides a good insight of the process of local learning as emphasized by Joseph Stiglitz. Stiglitz highlights the importance of knowledge in development. When he served as chief economist of the World Bank, he led the publication of *The World Development Report (WDR) 1998/99: Knowledge for Development* by putting knowledge at the core of development efforts [66]. Later, Stiglitz and Greenwald [58] published a book, *Creating a Learning Society*, which highlights the vital importance of promoting local learning in each arena of society—individuals, workers, managers, firms, governments, and other organizations—to realize economic and societal transformation. Key messages of this book include:

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 and particular technologies with greater learning capabilities and greater spillovers to other sectors. (22)

A critical aspect of “learning” is that it takes place locally and must adapt to local differences in culture and economic practice. Thus, “learning” prescriptions that work in some environments will not work in others. (375)

Through the lens of translative adaptation, local learning can be explained as a process of reconceptualizing the obtained knowledge through the value structure of recipient countries and society—which is indigenous learning practice. As such, local learning must be accompanied by translative adaptation, and this requires strong ownership of the recipient side over the process [22].

1.2.1.3 Three-Stage Process of Technology Transfer and Local Learning

Then, a key question is what are the conditions and mechanisms that enable a latecomer country to absorb foreign elements effectively without losing the local value structure, and how can the country in question learn appropriate methods and procedures for merging domestic and foreign elements. In this regard, Kikuchi [23] introduces a useful framework for understanding the process of technology transfer from advanced to developing countries. It involves a three-stage process of technology transfer, based on the Japanese postwar experience of learning production management technology (which later was called *Kaizen*) from the US and Europe and diffusing it after localization. These stages are: (i) learning new technology from advanced countries; (ii) examining the adaptability and validity of the introduced technology in Japan; and (iii) diffusing the technology at full-scale. Kim [25] also identifies three key sequences in the flow of technology from abroad to catch-up countries, based on the learning experiences of South Korea which achieved miraculous economic growth.³

While Kikuchi’s framework focuses on the stages of learning specific technologies by the Japanese private-sector organizations (technology learning), it can be applied broadly to the local learning process including policy learning by developing country government. Figure 1.2 shows our modified three-stage framework for translative adaptation and effective local learning which incorporates elements of systemic interaction with external agents (such as donors), with special attention to the government’s learning of industrial policymaking.

The figure illustrates the activities of local learning and translative adaptation as a process of using foreign knowledge (often, based on benchmarking countries’ models) as ‘input’ and combined with indigenous knowledge of the home country to produce an enhanced local knowledge as ‘output.’ Adapted models (compared to foreign models) are built on enhanced local knowledge, giving attention to the uniqueness of each country and society. Through this process, learning capacity can

³ Based on South Korean experience, Linsu Kim [25] regards government as a ‘learning facilitator’ (21). He notes three key sequences in the flow of technology from abroad to catching-up countries: (i) transfer of foreign technology, (ii) diffusion of imported technology, and (iii) indigenous R&D to assimilate and improve imported technology and to generate its own technology.

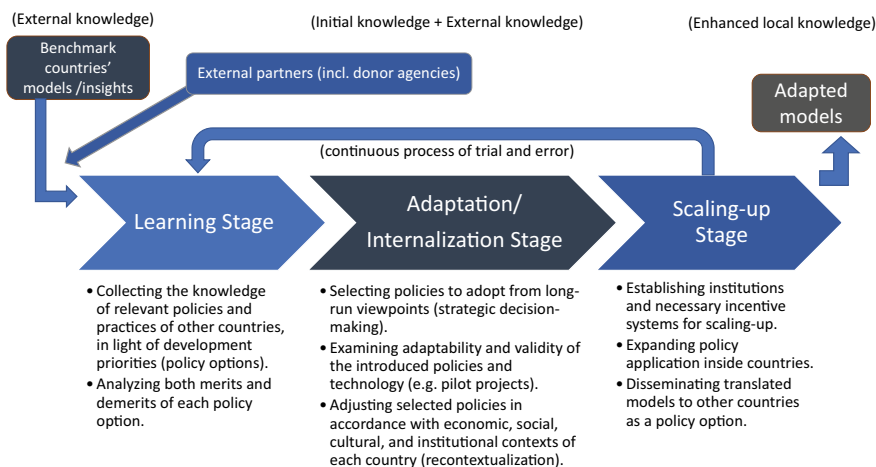


Fig. 1.2 The three-stage process of local learning and translative adaptation (an example of policy learning by government) (*Source* Adapted from Kikuchi [23], based on inputs from Junichi Mori and Akio Hosono)

be enhanced. The entire society (such as workers, managers, firms, government) is involved in local learning activities; but in light of centrality of industrial policy to learning, the government plays the dual role as a policy learner and a facilitator of societal learning (see Sect. 1.2.2).

Here, the government is expected to: (i) collect the information on relevant policies and practices from other countries and analyze the merits and demerits of each policy option (learning stage); (ii) select what policies to adopt, examine the adaptability of the introduced policies, and adapt them to its own country-context (adaptation/internalization stage); and (iii) expand policy application nationwide and if successful, even disseminate these experiences to other countries as a policy option (scaling-up stage).

International best practices—whether they are a technical and vocational education and training (TVET) system or a quality and productivity improvement approach—have little impact unless they are effectively put to use in the local context. The subsequent chapters include case studies of how such learning was initiated, how local adaptation took place, and whether and how development cooperation contributed to facilitating this process based on the above three-stage framework for local learning and translative adaptation.

1.2.1.4 Key Ingredients of Translative Adaptation and Effective Local Learning

As the above discussions suggest, translative adaptation does not naturally occur as a result of market mechanisms. To succeed, the process must be managed with careful deliberation and trial and error. Mindsets and institutions that facilitate a smooth systemic merger must be designed and installed. The government has a critical role to play in establishing the systemic aspect of learning—as a learner (policy learning) and a facilitator of learning by the private sector (societal learning including technology learning)—with a thorough understanding of each country's situation and surrounding external environment [51].

In this light, the key ingredients of translative adaptation and effective local learning can be summarized as follows:

- *Attention to the uniqueness of each country and society* by understanding country-specific circumstances (e.g., resource endowments, stages of development, social structure, and values), and envisioning and designing diverse paths to development;
- *Country ownership* that promotes the proactive role of government (policy learning) and private sector development (societal learning);
- *Process orientation with room for trial and error* to establish systems that properly correspond to the stages of learning, adaptation, and internalization, and scaling-up; and
- *Rethinking the role of development cooperation*, giving due consideration to the above three aspects to facilitate translative adaptation and effective learning of partner countries.

The first three points are those that developing countries must be mindful of, while the last is for donors who are urged to rethink their role in development cooperation. An important question is how to ensure effective translative adaptation in the development process instead of the mechanical application of technology from the outside of the society. We argue that 'both the recipients and providers of knowledge should be cognizant of the value of translative adaptation and pay significant attention to the value structure and institutions of the recipient side' ([22], p. 22). In this regard, the recipient side needs to play a proactive role in adaptation and the provider side needs to create an enabling environment for it.

Related to the fourth point, it is important that development cooperation be provided in such a way as to facilitate the learning process by recipient partners. Donors should duly recognize that '[t]here is no "best practice" that any country can adopt that will guarantee success' ([51], p. 3). They should have a deep understanding of uniqueness of respective partner countries and provide tailor-made advice in the process of knowledge and technology transfer. This goes beyond just sharing the best practice 'off-the-shelf' between donors and recipient countries. There is a need to establish the deeper intellectual partnerships through interactive dialogue.

1.2.2 Two Types of Local Learning: ‘Policy Learning’ and ‘Societal Learning’

Two types of local learning are important for industrial catch-up [42]. One is ‘policy learning’ by the developing country government to design and implement effective industrial policies; and the other is ‘societal learning’ by whole members of society to absorb new knowledge and technology and catalyze their mindset changes toward modernization. The below explains both types of learning and how they are inter-related and mutually supportive.

1.2.2.1 The Role of Industrial Policy in Promoting Societal Learning

Industrial policies play a crucial role in promoting societal learning [58]. This is because the government is responsible for establishing the systemic aspect of societal learning as a ‘learning facilitator,’ not only a learner itself [25, 51]. Figure 1.3 shows the dual role of government in creating a learning society, from a perspective of translative adaptation and local learning. First, the government itself 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 local learning with translative adaptation in respective countries. The second way is that the government is responsible for creating policies and institutions for effective societal learning so that translative adaptation takes place within the society, including technology learning by the private sector.

Ideally, a process of local learning should take place in both the public and private sectors. This is why policy and societal learning is needed. It is also important to note that in the context of industrial catch-up, the private sector plays a central role in technology transfer and societal learning. Government policies represent only one side of the mechanism behind industrial development [38]. This public–private partnership is essential because knowledge flows both ways and mutual learning is necessary. Nevertheless, 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.

Govt: Policy learning for industrial development

Govt: Creating mechanisms for societal learning

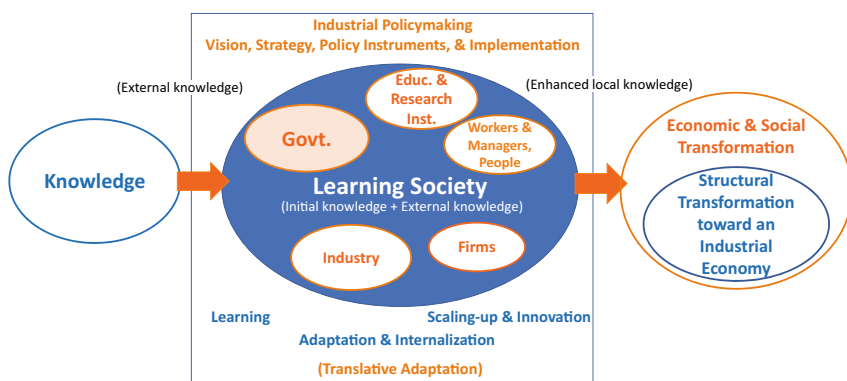


Fig. 1.3 Role of industrial policy in promoting societal learning [42] (Source Elaborated by the author, based on Fig. 11.1 in I. Ohno et al.)

1.2.2.2 Policy Learning

The above discussions suggest a positive aspect of government—as a solution provider in the industrial catch-up process. At the same time, we should recognize its weak aspect—the government as a problem [7]. The governments in many developing countries suffer from low capacity for policy design and implementation and face challenges to improve their policy capacity for industrial development. This was one of the major reasons why scholars and neoclassical economists, particularly in the 1980s–early 1990s, offered cautious assessments of industrial policy.⁴

However, the era of ideological controversies is coming to an end, and the nature of industrial policy debates has shifted to the practical aspects [41]. Many developing countries including Africa are increasingly interested in industrial development and even prioritized it in respective development strategies. For example, *The African Union Agenda 2063: The Africa We Want* (Agenda 2063) shows the continent’s aspiration for becoming a prosperous Africa, based on inclusive growth and sustainable development [5], regarding economic transformation as one of the priority goals. The recent African Union (AU) Summit on Industrialization and Economic Diversification, held at the end of 2022, discussed action-oriented measures to accelerate Africa’s industrialization, taking advantage of the commencement of trading under the African Continental Free Trade Area (AfCFTA) regime in January 2021. Now, the main question is how to improve the government’s policy capability for its proper

⁴ For example, Anne Krueger, a neoclassical economist known for her work on the political economy of the rent-seeking society [26], actively promoted liberalization and structural adjustment policies in developing countries as Chief Economist of the World Bank (1982–1986). She emphasized the risks that government intervention inevitably leads to rent-seeking behaviors by interest groups and generates high costs that inhibit the efficient functioning of market economies.

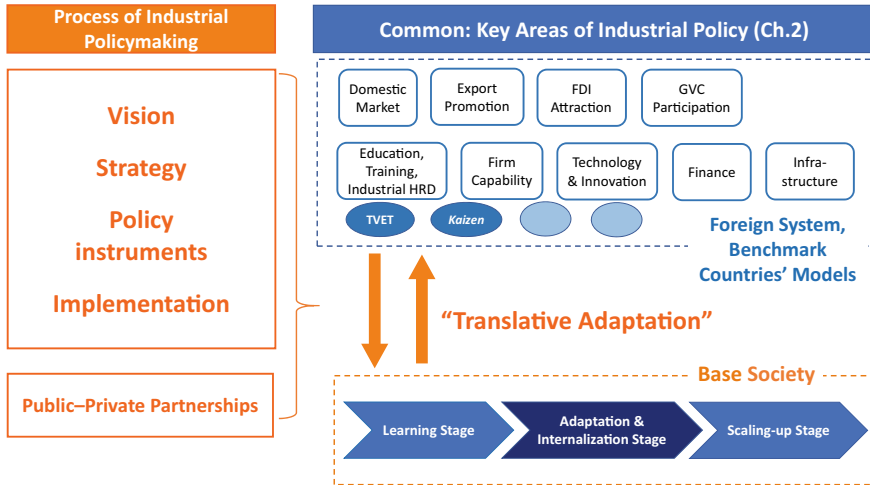


Fig. 1.4 Translative adaptation in industrial policymaking (Source Elaborated by the author)

application, and what instruments to select, rather than whether to engage in it [28, 41, 48, 54, 57].

Figure 1.4 shows key aspects of policy learning for industrial development from the lens of translative adaptation and local learning. Provided that industrialization is a national goal, the government is expected to assume three roles when designing and implementing industrial policies: (i) presenting overall vision and strategic direction of the country's industrialization; (ii) designing and implementing policy instruments; and (iii) establishing a proper process of industrial policy formulation and implementation, through close partnership with the private sector. The industrial vision determines strategic direction and priorities, and specific policy instruments are prepared and applied either horizontally across industrial sectors or vertically for selected sectors.

There is broad consensus on key components of industrial policy measures to be learned. Hosono classifies nine areas of industrial policy, based on extensive literature review (see Chap. 2). They include: (i) education, training, and industrial human resource development, (ii) firm capability, (iii) technology and innovation, (iv) finance, (v) infrastructure, (vi) domestic markets, (vii) export promotion, (viii) FDI attraction, and (ix) participation in global value chains (GVCs). Foreign experts and donors generally accept and recommend these areas as the menu of industrial policy measures for developing countries. In each area, relevant policy instruments can be designed (for example, TVET-industry linkage, quality and productivity improvement, industrial zone development and management). If applied across sectors, they can serve as horizontal industrial policies. If targeted at selected sectors or industries, they can function as vertical industrial policies.

Three points deserve attention. First, the learner side needs to make solid preparation by cataloguing relevant policy measures, setting benchmark countries, and

studying their particular models—mindful of what is common and what is unique to the country concerned. Although the menu of industrial policy measures is largely common, the local content varies. The details of policy design and organizational arrangements do matter. Such groundwork should serve as a valid starting point for formulating homegrown development policies.

Second, prioritization is important. For a latecomer government, any one of the measures in Fig. 1.4 is not easy to design and implement with local adaptation. Rather than trying to address all the industrial policy menu, it is advisable for the learner to start with a small number of measures that are relatively easy to adopt and at the same time relatively important for the country [48]. Furthermore, policy implementation needs to be monitored closely. In this light, the government should identify unique potential for each country and formulate a vision and strategic direction for industrialization, in close partnership with the private sector.

Third, the government needs to learn from the private sector, not just the foreign models of best practices. Because the private sector is the key actor of production, investment, and trade, it is important to listen to their voice and understand the concrete challenges they face. To be effective in setting industrialization vision, strategies, and specific policy instruments, the government must possess strong interest in the real economy, deep knowledge of the actual situation of industries, and mechanisms for communicating with the private sector. Public–private collaboration provides space for mutual learning and contributes to enhancing the quality of industrial policy. As such, policy learning should go hand in hand with societal learning as explained below.

1.2.2.3 Societal Learning

Development is not just a matter of technical adjustments, but a transformation of society [56]. This is because ‘[it] involves a movement from traditional relations, traditional ways of thinking, traditional ways of dealing with health and education, traditional methods of production, to more “modern” ways’ ([56], p. 3). In this regard, Stiglitz refers to the Enlightenment which took place in Europe in the latter part of the eighteenth century and emphasizes that ‘the most important part of the developmental transformation is the change in mindset that recognizes that change is possible and welcomes change’ ([57], p. 33).

In fact, we often hear from FDI firms in developing countries that factory workers recruited from rural areas to industrial parks, lack ‘soft’ skills and a proper mindset, including industrial work discipline and motivation. They may acquire technical skills (e.g., cutting and sewing in the case of garment factories) relatively quickly; but poor work attitude in such forms as absenteeism, lack of sense of urgency for work, and low motivation to work overtime, are more challenging and affect firm productivity [53]. FDI firms may also face mindset problems of their local managers, including absence of sense of purpose and urgency, poor time management, lack of global mindset, and so on [53]. These suggest that transformation of the mindset of

workers and managers, as well as firm culture, is critically important in building an industrialized economy.

The importance of societal learning is also stressed by Akio Hosono in his recent book, *SDGs, Transformation, and Quality Growth*, which emphasizes that making growth ‘genuinely’ inclusive and innovative requires taking full advantage of the talents of the entire population. He states that ‘[i]f learning capacity is limited to a small part of the population of a country, inclusive growth is unlikely to be attained’ ([13], p. 15).

Here, each arena of the society must learn—individuals, workers, managers, firms, governments, and other organizations—in the process of development [34, 58]. Put another way, according to Deepak ([34], p. x), learning can take place at three levels: micro, meso, and macro levels. At the micro-level, school education provides the base for nurturing the general capacity to learn, with TVET giving greater attention to learning specific or technical capacity. At the meso-level, capabilities of individual workers and managers, as well as those of firms must be built for managerial and technological upgrading. As such, ‘learning at school’ (micro-level) and ‘learning at work’ (meso-level) are complementary with the former designed to enhance the productivity of the latter [58]. At the macro-level, the government itself is a learner, and also assumes a strategic role in enhancing industrial and technological capabilities of various actors and institutions as discussed above. Moreover, it can play a catalyst role in society-wide change by undertaking projects that can lead to societal learning and promote mindset change ([56], p. 19). A good example is a national movement for quality and productivity improvement, implemented by the Singaporean government in the 1980s, which was inspired by Japan’s postwar experience and aimed at transforming the popular mindset toward hard work, teamwork, and creativity [39, 43]. This may be analogous to the Enlightenment experience in Europe.

The subsequent chapters advance various ways to promote policy and societal learning. For example, several case studies highlight the role of *Kaizen*⁵ in: (i) the development of human skills, especially non-cognitive skills of individual workers (Chap. 9); (ii) the creation of ‘learning enterprises’ by promoting organizational learning (Chap. 7); and (iii) the transformation of popular mindset toward quality and productivity through a national movement (Chap. 4).

In a separate book *Workers, Managers, Productivity: Kaizen in Developing Countries* [14], Hosono shed light on the learning dimension of *Kaizen*. With reference to the Japan International Cooperation Agency (JICA) [21], he emphasizes that the *Kaizen* process: (i) changes the mindsets of managers and workers; (ii) fosters

⁵ *Kaizen* literally means ‘improvement,’ but is also commonly referred to as ‘continuous improvement’ (see Chap. 9 for the definition and evolution of *Kaizen*). It is a set of Japanese knowledge used to promote quality and productivity improvement based on an inclusive and participatory approach, involving the entire workforce from the top management to middle managers and workers. Masaaki Imai explains that *Kaizen* is an umbrella concept for a large number of Japanese business practices, such as 5S, suggestion system, Quality Control Circle (QCC), Total Quality Management (TQM), the Toyota Production System, the Just-in-Time System, the *Kanban* System, etc. Imai also argues that *Kaizen* is a unifying thread running through the philosophy, the systems and the problem-solving tools developed in Japan during the 1950–1980s ([15], p. xxxii).

personnel who can think and act themselves; and (iii) solves problems as a team, thereby promoting teamwork. In other words, *Kaizen* activity such as QCC (by front-line workers) and TQM (as organizational learning) can increase productivity through learning and contribute to creating a ‘learning enterprise.’ He also stresses that *Kaizen* differs from other approaches—especially those based on monetary incentives or sanctions—due to its distinctive focus on inclusive and participatory learning [12].

1.3 Revisiting Japanese Experiences of Industrial Development and Development Cooperation

The Meiji modernization and the post-World War II economic reconstruction are the two critical moments in the history of Japan’s industrial catch-up. These are the periods when proactive and intensive learning took place—at both the government and the private sector—and the Japanese economy achieved major economic and social transformation. Meiji Japan did self-study because no foreign aid was available in those days. Postwar Japan utilized various channels, including ODA, to learn foreign knowledge and technologies for industrial catch-up.

There exists a rich literature on the history of Japanese economic development [33, 38, 49, 50]. Therefore, rather than a comprehensive review, this section will highlight selected episodes that characterize Japanese perspectives on industrial development and the development thinking that underpins Japan’s industrial development cooperation. It will also discuss the diffusion of learning that has occurred in Asia, following Japan’s learning from the West.

1.3.1 *Japanese Perspectives on Industrial Development*

The core elements of the Japanese approach to economic development include state capacity-building, the long-term perspective and goal orientation, and industry-specific real-sector concern. These concrete and practical principles were applied during Meiji modernization and rapid industrial catching-up after World War II when Japan was itself a latecomer developing country. As will be shown below, they are closely related to the key ingredients of translative adaptation and effective local learning, presented in Sect. 1.2.1.

1.3.1.1 Policy Learning and Societal Learning in Meiji Japan

When Japan opened its doors to the outside world in the nineteenth century, it was shocked by the level of industrialization in those countries that had gone through the Industrial Revolution. This was also the age of imperialism. Recognizing its

backwardness, the Meiji government aggressively promoted learning to industrialize, embracing the national slogan of enriching the country and strengthening the military.

The most famous example is the dispatch of the Iwakura Mission to the US and Europe during 1871–1873. Led by Tomomi Iwakura (a high-ranking official with rank of Prime Minister), more than 100 members including the Prime Minister, Ministers, officials, researchers, and students, participated. It was quite surprising that key cabinet ministers would be away for such a long overseas mission—shortly after the establishment of the Meiji government. Nevertheless, the Iwakura Mission provided a valuable opportunity to Meiji leaders to gain first-hand knowledge of industry, technology, and political systems of advanced countries from a comparative perspective and nurtured their passion for industrialization [4].

Upon returning to Japan, Meiji leaders vigorously promoted industrialization. In 1874, Toshimichi Okubo (1830–1878), the first home minister of the Meiji government who initiated an industrial modernization drive (see Chap. 3), submitted the Proposal for Industrialization to the government after the Iwakura Mission. In the proposal, Okubo emphasized the following points ([36], p. 561): The strength of a country depends on the prosperity of its people which, in turn, is based on the level of output. To increase output, industrialization is essential. However, no country has ever initiated the process of industrialization without official guidance and promotion. This statement shows Okubo's conviction of a critical role of the state in the early stage of industrialization.

The Meiji government took a phased approach and introduced foreign knowledge and technology through various measures sequentially, in overlapping steps. Kenichi Ohno, in his book *The History of Japanese Economic Development: Origins of Private Dynamism and Policy Competence*, explains that '[d]ifferent technological transfer schemes were adopted depending on project type and time periods, from simple turnkey projects contracts and management contracts to engineering education, selective technical advice, copy production based on reverse engineering and original invention after studying foreign models' ([49], p. 50). He also states that the most prominent aspect of Meiji Japan's technology absorption was progression from easy to complex in both content and method of technology learning as domestic capability steadily rose. Hashimoto [9], based on his literature review of foreign advisors in Meiji Japan, explains how the government gathered a wide range of information and carefully prepared to find and invite the most suitable experts in each field from around the world. While the number of foreign advisors hired by the Meiji government exceeded 500 in 1875, the number—especially that of engineers—declined significantly toward the end of Meiji as Japanese engineers steadily replaced foreigners [49, 61]. It should be noted that behind this achievement, there were serious learning efforts through education. In 1871, the Meiji government established the Imperial College of Engineering (renamed as *Kōbu Daigakkō* in 1877) and subsequently, other high-level industry schools, to educate and produce domestic engineers.

In parallel, the Meiji government made the utmost effort to re-negotiate the unequal commercial treaties with the West, which were concluded in the late Edo (1858) period to restrict Japan's tariff rights. The restoration of tariff autonomy was important for the government in securing tax revenues as well as the policy space

for industrialization.⁶ As such, the Meiji government was a serious learner, and also acted as a 'learning facilitator' in the Japanese society in acquiring knowledge from abroad and absorbing knowledge through training and education.

It is also worth noting the learning efforts by the private sector and its purposeful and pragmatic approach. A typical example is a success story of the Osaka Spinning Company, established in 1883 by Eiichi Shibusawa (1840–1931), a super business coordinator and former official of the Ministry of Finance [44].⁷ To cope with surging imports of cotton yarn as the result of opening trade with the West, the government set a target for substituting import of cotton yarn with domestic production but had limited progress. Recognizing the problems of existing state-owned cotton spinning mills (such as small production scale, location, lack of technical expertise), Shibusawa decided to set up a new spinning factory with modern machines and worked hard to mobilize the necessary funding. In addition, he persuaded Takeo Yamanobe, a young engineer studying in the United Kingdom (UK) at the time, to acquire the latest knowledge and technology of the cotton industry, and financially supported his study. Upon return, Yamanobe became the chief engineer of the Osaka Spinning Company, and led it into instant success by using his deep practical knowledge. This had a powerful demonstration effect, and a large number of spinning factories followed. By early twentieth century, Japan had become the top textile exporter ([49], see also Chap. 3). This story tells how the government and the private sector worked hard to achieve a shared national goal, maximizing their learning outcomes. It also shows the importance of a pragmatic approach with specific targets and concrete thinking.

1.3.1.2 Goal Orientation and Real Sector Concern in Postwar Japan

Long-term perspective and goal orientation, and industry-specific real sector concern are key features of Japanese approach to economic development. While these are salient in Meiji Japan's industrialization drive as mentioned above, let us provide more examples from the postwar economic recovery and high-growth eras.

The post-World War II period through the mid-1950s was a time when Japan focused its efforts on economic reconstruction of the war-torn economy [63]. Industrial policy during this period aimed at rebuilding basic industries to revive the Japanese economy. The following two initiatives formed the backbone of this effort.

⁶ Tariff rights were partially regained in 1899 and completely restored in 1911, as Japanese modernization and industrialization proceeded, and its success came to be recognized by Western countries.

⁷ Eiichi Shibusawa is often called as the Father of Japanese capitalism. He established over 500 companies, numerous economic institutions such as the stock exchange and the chamber of commerce, and non-economic institutions such as hospitals and universities. It is interesting to note that Shibusawa mobilized capital, technology, and human resources for setting up companies but never assumed general directorship. He delegated the running of the company to others. Shibusawa did not form his own *zaibatsu* (large industrial and financial conglomerates), unlike Yataro Iwasaki who founded the Mitsubishi *zaibatsu*.

First, *The Basic Problems of Japan's Economic Reconstruction* (hereinafter, the 'Basic Problems' report) [31],⁸ compiled by the Special Survey Committee of the Ministry of Foreign Affairs consisting of prominent researchers and officials and coordinated by Saburo Okita, was a monumental work which outlined Japan's postwar reconstruction plan [55]. The 'Basic Problems' report made systematic assessment of the initial conditions of the Japanese economy and established concrete and realistic targets. It prioritized heavy and chemical industries as the key to postwar economic recovery, while keeping an outward orientation by promoting export of industrial products through participation in the international division of labor. The report supports the positive role of government in presenting long-term visions and strategies for development and coordinating the actions of the private sector.

Second, 'the Priority Production System'—proposed by the Coal Subcommittee, a private advisory group of Prime Minister Shigeru Yoshida, chaired by Professor Hiromi Arisawa of the University of Tokyo—embodied a focused approach to enhancing available resources. At that time, coal was the only domestical energy source produced in adequate amounts in Japan [20]. The Priority Production System, adopted in December 1946, channeled remaining scarce resources into a few priority industries (i.e., coal, iron, and steel), using them as a catalyst to kick-start the industrial sector and to rebuild the national economy as a whole. This plan was quite successful, and the Japanese economy began to recover as early as 1947.

The central figure in these efforts was Saburo Okita (1914–1993). He is known as the architect of Japan's postwar economic reconstruction program as a planner and economist [41]. Immediately after World War II, Okita was associated with the Ministry of Foreign Affairs Research Bureau, then worked at the Economic Stabilization Board. From 1954 to 1960, he was at the Economic Planning Agency (EPA), responsible for the first to fifth White Papers on the Japanese Economy. Here, we can find his development thinking. Long-term goals must be set for Japan's recovery and global industrial repositioning. Concrete real-sector strategies must be created to attain these goals, sector by sector.

Later, Okita served as the President of the Overseas Economic Cooperation Fund (OECF 1973–1977) and then Minister of Foreign Affairs (1978–1980) when he became closely engaged in North–South relations. After retiring from his official positions, Okita further expanded his scope of advice to and policy dialogues with developing countries to share Japanese experiences of economic development. This includes economic policy advice to China in the late 1970s (Sect. 1.3.3), and Argentina (the so-called 'Okita Report') in the mid-1980s, which is widely regarded as a pioneer work in Japan's intellectual cooperation with developing countries (see Chap. 5).

⁸ Toward the end of the war, young engineers including Saburo Okita and Yonosuke Goto knew that Japan would lose and decided to organize study meetings to discuss post-war recovery strategies. The first meeting took place on August 16, 1945—one day after Japan's defeat. They met every week with the attendance of prominent officials and academics, with Okita and Goto serving as the secretariat. The study group was later officially recognized as MOFA's Special Survey Committee.

Following the postwar recovery period, industrial policies during mid-1950s to the early 1970s aimed at modernizing and strengthening the international competitiveness of various industries (e.g., textile, light machinery industries) and developing export-oriented industries. Competing effectively with Western multinationals was another important goal as trade barriers were lifted under the GATT Kennedy Round commitments. In 1960, Prime Minister Hayato Ikeda adopted the Income Doubling Plan, which set the goal of doubling national income within a decade. The Ministry of International Trade and Industry (MITI) enacted regulations such as the Act on Temporary Measures for the Promotion of the Machinery Industry and the Small and Medium-sized Enterprise Modernization Promotion Act and promoted the introduction of foreign new technologies in preparation for trade liberalization [63]. MITI together with the Japan Development Bank coordinated and assisted private efforts in improving productivity (see Chap. 2). Various productivity tools such as the 5S technique⁹ and quality control circles (QCC), which are collectively called *Kaizen*, were developed by learning from US methods and adapting them to the Japanese context. The private sector took the initiative of organizing *Kaizen* national movements based on collaboration among industry, government, and labor unions (see Chap. 4).

Masatake Wada, who himself was a MITI official at that time, recalls that MITI and businesses shared the same awareness and future visions. MITI officials communicated closely with the private sector to understand different intentions and problems of individual firms, and then formulated industrial policies [63]. In a sense, industrial policy was a joint work between MITI and business circles, and both sides benefitted from mutual learning.

As these examples show, industrial policy has taken a goal-targeting form, with deep interest in the real economic situation. It also tries to build on unique potentials Japan had at that time. Concrete action plans were prepared to realize such growth potentials that may designate specific industries or areas to be developed, or a time-bound plan to build human capital, power, transport, and telecommunication networks that are needed to develop them ([40], p. 156). Limited resources were poured into this area to realize that potential rather than scattered across many unrelated programs.

⁹ The 5S technique, consisting of Seiri, Seiton, Seiso, Seiketsu, and Shitsuke, is a very Japanese method for improving quality and productivity on the factory floor. These five slogans can be variously translated. One example is Sort, Set in Order, Shine, Standardize, and Sustain, which maintains the initial letter of S but deviates from the Japanese meaning.

1.3.2 *The Japanese Approach to Industrial Development Cooperation*

The above perspectives, nurtured through its own catching-up process, have been strongly reflected in Japan's philosophy and approach to industrial development cooperation. These can be summarized as follows [41, 44].

1.3.2.1 **Focus on 'Growth Ingredients' and Field-Orientation with Hands-On Support**

A key feature of Japanese approach to industrial development is its real sector concern, where project details and concrete methods matter. Japanese development cooperation exhibits a profound interest in individual sectors and concrete projects at *gemba*—a place where real action takes place such as factories and crop fields. JICA, an executing agency of Japanese bilateral ODA, declares *gemba*—‘Dive into the field and work together with the people’—as a priority action of the organization.¹⁰ Many JICA documents and ODA evaluation reports discuss the importance of *gemba*-orientation and looking at the real issues, and how they have contributed to building trusts with partners in developing countries.

More specifically, Japanese development cooperation pays greater attention to ‘growth ingredients’ such as the abilities and problems of individual firms in the private sector, the structure of an economy, as well as human, technological, production, and logistical details, in the concrete context of target sectors and regions. Training factory workers for *Kaizen*, laying out capital equipment efficiently, and matching crop species with particular soil are among things that are seriously discussed [40, 44]. In practice, this approach is embodied as hands-on support working side-by-side with developing country counterparts. By contrast, Western donors tend to focus on policy and institutional frameworks, such as market functions, principles of government intervention and budgets and public investment, monitoring and evaluation, administrative efficiency, and accountability.

For example, Kikuchi [24], a JICA expert, compares Japanese and European Union (EU) approaches in quality and productivity improvement projects in Tunisia and notes that: (i) the EU project assists Tunisian firms to acquire ISO certification, aiming to transfer internationally uniform standards applicable for all companies (e.g., business management, document preparation); and (ii) the JICA project (*Kaizen*) envisages improvement of quality and productivity on the factory floor, adopting different techniques and approaches for different problems encountered by individual companies. The Ease of Doing Business Indicators and the World-wide Governance Indicators, developed by the World Bank¹¹ are another examples.

¹⁰ See JICA homepage which explains its vision, mission, and action: <https://www.jica.go.jp/english/about/mission/index.html#intro>.

¹¹ See the World Bank's websites, <https://www.doingbusiness.org/en/doingbusiness>; <https://info.worldbank.org/governance/wgi/>.

They emphasize overall fairness, the improvement of the business climate, and good governance. Indicators are set by extracting desirable attributes of the international best practices, and countries are ranked against these global norms so that they know where they stand [40, 45].

In this regard, Toru Yanagihara makes an interesting comparison between the Japanese and Western approaches to economic development [67]. According to him, there are two contrasting ways of understanding and analyzing economic development. One focuses on the ‘framework’ of an economic system and its management and the other focuses on an economy as the sum total of its ‘ingredients’ or component parts. The ‘framework’ represents the rules of the game according to which economic agents make decisions and take action in a given economy. In contrast, the ‘ingredients’ approach refers to tangible organizational units such as firms, official bureaus, and industrial projects and their aggregations such as industries, sectors, and regions. The ingredients approach conceives of the economy as a collection of these components. It takes a deep interest in how individual players are doing in the field and the outcome of each game.

Let us think about a football game. To realize a fair game, clearly defined rules and referees facilitating a level-playing field must be put in place. At the same time, individual players must be coached in a tailor-made way so as to maximize their talents. The two approaches are complementary.

Nonaka and Takeuchi [37] present another interesting comparative perspective by introducing the two concepts: ‘explicit knowledge’ and ‘tacit knowledge.’ Explicit knowledge is oriented toward a context-free theory, while ‘tacit knowledge’ is created in a specific, practical context. One could say that the international best practice or normative approach provides context-free ‘explicit knowledge,’ while the hands-on approach emphasizes sharing context-specific ‘tacit knowledge’ with counterparts through joint work and interactive communications on the ground. Nonaka and Takeuchi [37] also state that the ‘tacit knowledge’ is related to the type of knowledge unique to Japan and the East.

There is one thing to keep in mind. In the above, we have contrasted the Japanese and Western approaches, but this is simply a matter of emphasis. In fact, they have much in common. Furthermore, both approaches are necessary and mutually reinforcing. Nevertheless, as a general tendency, it is fair to say that the ‘framework’ approach is prevalent in Western donors, while the ‘ingredients’ approach is more common in Japan and East Asia ([40], p. 146).

1.3.2.2 Dynamic Capacity Development

Focus on growth ingredients, field (*gemba*)-orientation, and the ‘hands-on’ approach are inter-related features of Japanese industrial development cooperation. We argue that this approach supports *dynamic capacity development* of partner countries by facilitating the process of learning and translative adaptation, and thus enhancing the government’s policy capacity [44]. Dynamic capacity development aims to achieve concrete objectives through step-by-step, hands-on-efforts, and learning by doing

[44]. Capacity is created where it is needed through solving real, concrete problems one by one.

Field-orientation and joint work provide ample opportunities for government leaders and policy makers to interact and formulate policies over an extended period. Backed by the knowledge of country-specific contexts from ground perspectives, these help to establish concrete goals that are both desirable and feasible for each country. Instead of comparing countries across the board to rank them or finding weaknesses in individual countries relative to global norms, the dynamic capacity development approach tries to identify possible future paths unique to each country. Concrete action plans are prepared to realize such growth potentials that may designate specific industries or areas to be developed, or a time-bound plan to build human capital, power, transport, and telecommunication networks that are needed to develop them ([40], p. 156).

Nevertheless, we should also recognize its constraints. A great advantage of the provision of context-free ‘explicit knowledge’ is that it is easier and quicker to learn standardized solutions or best practices ‘off-the-shelf.’ This approach may be more fitting to the age of digitalization, where knowledge can be disseminated instantaneously. The dynamic capacity development approach demands much patience and persistence from counterparts because they are encouraged to find their own tailor-made solutions through joint work with foreign experts. Learning tacit knowledge from foreigners usually takes more time compared to learning well-documented explicit knowledge. Moreover, foreign donors must be equally patient. If donor agencies demand only quick results, foreign experts and consultants may not be motivated to adopt this approach. Another prerequisite is strong policy ownership. If counterparts are not willing to go through intensive policy learning processes, this approach will fail.

The experience of COVID-19 crisis has taught us the strengths and weaknesses of each approach. Technological advances have made it possible to easily acquire large amounts of basic and standardized knowledge through digital platforms. At the same time, there is a growing realization that learning ‘in person’ is of irreplaceable value, especially when personalized learning is required. Rather than choosing one or the other, it is important to find the best mix by considering the advantages and disadvantages of each. In this respect, the Japanese approach could certainly contribute to the latter.

1.3.3 *Regional Diffusion of Learning in East Asia*¹²

East Asia is the region where a chain reaction of learning for industrial catch-up has taken place—in both the public and private sectors. According to Alexander Gershenkron's well-known proposition of the 'advantage of backwardness,' latecomers can achieve industrialization faster than advanced countries by leveraging the existing technologies developed by early comers [8, 27]. But such latecomer advantage does not realize automatically, the transferred technology and knowledge must be internalized to take root in recipient countries and societies so that they can provide the basis for creating localized, new knowledge [1, 38, 59].

In this regard, East Asia is notable because industrial catch-up has occurred not only by latecomer advantage, but also by regional diffusion of learning [32]. East Asia had role models of developmental success, starting with Japan and followed by such newly industrialized economies as Taiwan, Singapore, Hong Kong, and South Korea in the 1970s. Japan was the first non-Western country to open its country in the second half of the nineteenth century (from the late Edo to the Meiji periods) to learn Western knowledge and modernize by adapting this to its own way with strong ownership. This is exactly the process of 'translative adaptation' [29, 30]. After World War II during the Allied occupation from 1945 to 1953 and throughout the Cold War, Japan greatly benefitted from learning opportunities provided by the US through technical advice and assistance [62]. The Quality Control and Productivity Movements, initiated respectively by the Union of Japanese Scientists and Engineers (JUSE) and the Japan Productivity Center (JPC), were typical examples of learning and translative adaptation of American methods [43], also (see Chap. 4). More generally, the Japanese government, private companies, and organizations including the Ministry of International Trade and Industry (MITI) actively introduced knowledge and technology from overseas in this economic reconstruction and high-growth era [63].

The combination of US aid and Japanese catch-up experiences stimulated developmental leaders in neighboring countries, and regional diffusion of learning for industrialization took place in East Asia [62, 69]. Ezra Vogel [62], in *The Four Little Dragons*, highlighted the spread of industrialization in Taiwan, South Korea, Hong Kong, and Singapore as follows¹³:

East Asian nations received massive aid from the United States and from international organizations, which gave them extensive opportunities for contact with knowledgeable foreigners. These were overwhelmingly Americans, who became in effect tutors, not only in modern technology and management, but in the broader aspects of industrial society. Because American advisors could provide East Asians with appropriate advice and training of greater depth than any textbook could transmit, they were perhaps even more crucial than the financial, military, and technical aid. ([62], p. 85)

¹² The author is grateful for the support of Kanako Omi and Kae Yoshino in the extensive literature review of country experiences.

¹³ Vogel noted American aid and the Japanese model as two of the five key situational advantages for their rapid industrialization. The other three include: destruction of the old order, sense of political and economic urgency, and eager and plentiful labor force.

After World War II, the Japanese model was of great importance to Taiwan, South Korea, Hong Kong, and Singapore. [...] Having the Japanese model provided both the confidence that they too could succeed and a perspective on how to proceed. ([62], pp. 90–91)

The importance of role models for industrial catch-up is also stressed by Yeo et al., Singaporean experts:

Regions need countries with a developmental success story to serve as role models for their neighbors. At the turn of the twentieth century in East Asia, Japan was such a role model. [...] [A]fter the Second World War, neighboring economies like South Korea, Taiwan, and Singapore acquired ideas and technologies, as well as a psychological boost, from Japan, enabling them to achieve developed status. ([69], pp. 173–174)

The effects of regional contagion were also highlighted by Stiglitz and Greenwald:

It is no accident that Japan's neighbors were the first to learn how to learn—they observed, and imitated, what Japan had done. This knowledge of learning how to learn then diffused around Asia. ([58], p. 66)

China, which became the second-largest economy after the US, surpassing Japan in 2010, is no exception. In 1978, the senior vice-premier of the People's Republic of China Deng Xiaoping encouraged the country's leaders to make study trips abroad, and with 13 leaders believed to have made 20 trips to foreign countries both in Europe and Asia, 1978 was later named 'the year of foreign travel' [27]. Deng Xiaoping himself visited Japan (October) and Singapore (November) in 1978.¹⁴ He was strongly impressed by their technology advancement and high standard of living; he also recognized China's backwardness and need to introduce foreign technology and capital. Shortly after his visits to Japan and Singapore, the Communist Party launched the 'open door' policy in late 1978.

Recognizing the importance of experimentation in their massive economic reform agenda, in July 1979, the Chinese government decided to let both Guangdong and Fujian provinces move ahead of others to set up export-processing zones in four cities (Shenzhen, Zhuhai, Shantou, and Xiamen), granting them the title of Special Economic Zone (SEZs) and a certain degree of autonomy by delegating powers to their city governments to attract FDI and generate exports [27].

In this connection, Saburo Okita was one of the first foreign experts who advised top leaders in the Chinese Communist Party, including Deng Xiaoping, when the 'open door' policy was launched in late 1978 [18, 70]. At the request of Deputy Prime Minister Gu Mu, Okita visited Beijing from the end of January to early February 1979, gave lectures on the factors contributing to Japan's rapid growth, and exchanged views on the challenges of China's economic development. Okita presented the Japanese

¹⁴ During his visit to Japan, Deng Xiaoping met with Prime Minister Takeo Fukuda, attended the signing ceremony of the Sino-Japan Friendship Treaty, and visited Japanese companies such as Nippon Steel, Nissan, and Panasonic. He also took a ride on Shinkansen (high-speed bullet train) and stated: 'This is the speed we are looking for' and 'I now understand what is about modernization.' See the homepage of the Ministry of Foreign Affairs (in Japanese): https://www.mofa.go.jp/mofaj/a_o/c_m1/cn/page6_000210.html. In Singapore, Deng met with Prime Minister Lee Kuan Yew and was shown the country's Housing Development Board and the Jurong Town Corporation [69].

development model as one that is based on the Western model but with the addition of a stronger role of government in economic planning. He also suggested the idea of special economic zones, with reference to Nagasaki's Dejima, the Dutch enclave of foreign trade in otherwise internationally isolated Japan in the Edo period, and Thailand's special economic zones [18, 70].

The Chinese government was also active in promoting learning by higher educational institutions. It utilized the channel of multilateral cooperation to obtain knowledge and expertise from diverse sources. More specifically, the Chinese government requested the World Bank to support the capacity development of universities in education and research so that major universities could train the young generation of people with knowledge, skills, and mindset suitable to realize the goals of the 'Four Modernizations' set forth by Deng Xiaoping in the late 1970s.¹⁵ The World Bank extended a series of loans, including the first Chinese University Development Project (CUDP I: 1982–1985) which focused on science and technology faculty and the second Chinese University Development Project (CUDP II: 1985–1990) which supported the revitalization of engineering and economics/finance faculties. According to Shigeru Ishikawa who served as the Vice Chairman of Economics and Finance of the International Advisory Panel of CUDP II, the project invited senior professors from various countries such as the US, Japan, West Germany, Australia, Canada, and the UK to receive advice on the curriculum development and design core courses at major universities [17]. The Chinese side was eager to learn. Although CUDP I was the first Bank operation in China, 'in almost every respect, project outcomes have surpassed appraisal expectations' ([64], p. vi). The World Bank's document also states that '[a] political consensus existed in China in 1985/86 at the start of the project [CUDP II]' and that 'this consensus existed in all sectors of the economy and throughout the government and facilitated the rapid development of the curriculum' ([65], p. 12). This is a good example of the government's facilitating societal learning through strengthening educational institutions.

In Southeast Asia, Malaysian Prime Minister Mahathir launched the 'Look East' policy in 1981 to improve Malaysia's human resource development by learning not only academic and technical knowledge but also the labor ethics and discipline of the Japanese people. Since 1982, a series of large-scale programs has been implemented to send Malaysian students and trainees to Japanese universities, industries, and training institutes through various funding schemes. This initiative continues today under the framework of the Look East Policy 2.0.¹⁶ Singaporean Prime Minister Lee Kuan Yew initiated the nationwide productivity movement in 1981 to overcome the mindset problems and poor ethics of Singaporean workers and requested the Japanese government to transfer its expertise in quality and productivity improvement. JICA ran its first comprehensive technical cooperation project in Singapore

¹⁵ The 'Four Modernizations' was set forth by Deng Xiaoping at the end of the Cultural Revolution in 1976, to upgrade the Chinese economy, particularly in the areas of agriculture, industry, defense, and science and technology.

¹⁶ See the website of 'The Malaysian Look East Policy' created by the Embassy of Japan in Malaysia. <https://www.my.emb-japan.go.jp/English/JIS/education/LEP.htm>.

between 1983 and 1990. While Singapore learned from Japan, the country established its own institutional mechanism for productivity movement. This productivity campaign was promoted not only in the business world (which was the original Japanese model), but also in the public sector, linked with a civil service reform program (see Chap. 4). Based on this experience, Singapore came to offer technical cooperation for productivity improvement in developing countries, including the neighboring Association of South-East Asian Nations (ASEAN) countries and some African countries.

Certainly, the above-mentioned East Asian economies studied diverse models for development—not just the Japanese one. A key point here is that national leaders, policymakers, and the private sector (including firms, managers, and workers) were eager to learn for industrial catch-up. They made serious policy and societal efforts to internalize foreign models suitable to country-specific situations. These examples show the nature of learning in East Asia—the regional diffusion of local learning and translatable adaptation—to promote homegrown development and industrial catch-up. They also highlight the importance of political leadership in initiating national learning efforts.

1.4 Approach, Structure, and Main Themes of This Book

1.4.1 Case Study Approach

This book adopts a case studies approach to analyze country-specific experiences of proactive policy and societal learning, from the lens of translatable adaptation. The successive chapters contain many real cases from Japan and the other countries in Asia, Latin America, and Africa, focusing on the following research questions:

- How can foreign models of economic development be effectively learned by and applied to today's latecomer countries?
- How can such learning be initiated by the governments and societies with different features?
- Whether and to what extent have translatable adaptation and local learning taken place? and what are key factors affecting the results?
- What is the role of the government in the translatable adaptation and local learning processes?
- What is the role of development cooperation in facilitating the learning process?
- How should (or should not) this learning method be revised in the age of SDGs and digitalization?

The case studies cover the process and key areas of industrial policymaking shown in Fig. 1.4: (i) industrial policy (overall and specific sectors), (ii) quality and productivity improvement (*Kaizen*), and (iii) education and training for skill development. The analyses pay close attention to the perspectives presented in Figs. 1.2 and 1.3

and the ‘key ingredients of translative adaptation and effective local learning’ process mentioned earlier. Most of the cases are drawn from actual programs and projects of Japanese industrial development cooperation. We consider that such concrete analyses of real cases—rather than the studies on general theories and policy framework—are highly useful for national leaders and practitioners in developing countries to deepen their understanding of the pragmatic ‘how’ aspects of learning for catch-up.

1.4.2 Structure of This Book and Main Themes to Be Addressed

Table 1.1 shows the structure of the book and the relationship between chapters and its main themes. The subsequent chapters will present the various patterns of local learning initiated and promoted by different actors in the process of industrial catch-up. These actors range from national leaders, government institutions (e.g., counterparts, R&D organizations, TVET schools), the private sector (e.g., business leaders, firms, NPOs, universities), to individuals (e.g., workers and managers of firms). We also show how these initiatives have been developed into homegrown mechanisms and systems that support industrial development, giving attention to two types of learning—policy learning and societal learning.

More specifically, the book is composed of three parts with the following contents.

1.4.2.1 Translative Adaptation in the Industrialization Process

Part I (Chaps. 1–2) provides an overview of translative adaptation in the industrialization process and the role of industrial policies in learning, innovation, and transformation.

Following this introductory chapter, Chap. 2 reviews the typology and essential aspects of industrial policies, and examines the role of industrial policies in learning, innovation, and transformation, based on five country cases—Japan, South Korea, Malaysia, Brazil, and Chile—with special reference to steel, automotive, and natural-resources-based industries (palm oil, grain and food value chain, forestry products, and salmon industry). Three findings are worth noting. First, the governments of case studies countries have adopted diverse strategies for industrial development. Second, in all cases, industrial policies have been extensively implemented—both vertical and horizontal instruments—and contributed to their structural transformation. This suggests the importance of properly combining industrial policy instruments, under sector-specific characteristics and challenges. Third, in the process of development of the above transformative industries, many indigenous adaptation and innovation initiatives have been carried out. The public–private collaboration, through partnerships between the government, firms, their associations, research institutions, and

Table 1.1 Relationship between chapters and main themes of this book

Themes of chapters	Key areas	Local learning initiatives
Ch.1: Introducing foreign models for development (overview)	Key concepts, analytical frameworks, Japanese perspectives	Govt. & various actors
Ch.2: Industrial policies for learning, innovation & transformation (Japan, South Korea, Malaysia, Brazil, & Chile)	Industrial policy	Govt. & various actors
Ch.3: State learning in the Meiji period (Japan)	Industrial policy	Govt. (esp. national leaders)
Ch.4: National movements for quality & productivity improvement (Japan & Singapore)	Quality & productivity improvement	Private sector (Japan: NPO) & Govt. (Singapore: counterpart organizations)
Ch.5: Bilateral policy dialogue (Argentina, Vietnam, Ethiopia, & Thailand)	Industrial policy	Govt. (esp. national leaders & key policy makers)
Ch.6: Industry engagement in TVET (Vietnam)	Education & training	TVET university (public sector)
Ch.7: <i>Kaizen</i> promotion in Africa (Tunisia & Ethiopia)	Quality & productivity improvement	Govt. (esp. counterpart organizations)
Ch. 8: Industrial technology promotion & <i>monodzukuri</i> education (Thailand)	Education & training, and quality & productivity improvement	TVET university & NPO (private sector)
Ch.9: <i>Kaizen</i> and non-cognitive skills development in Africa	Quality & productivity improvement	Individuals (esp. workers, managers)
Ch.10 New industrial landscape	Industrial policy	Govt. & various actors

Source The author

other stakeholders, has been essential in learning, adaptation, and innovation. As such, industrial policies in the case studies have contributed to enhancing the societal capacity for learning.

1.4.2.2 Case Studies from Japan, Asia, Latin America, and Africa

Part II (Chaps. 3–8) offers concrete case studies of translatative adaptation and local learning in the industrialization process.

Chapter 3 analyzes Japan's state learning in the Meiji period from the perspective of industrialization vision and draws implications for today's developing countries. The chapter gives special attention to the learning process of state leaders and the Ministry of Industry in the early years of industrialization, in particular, how the

divergence between the reality of the industrial sector and the direction of industrialization vision narrowed in stages. To this end, it traces the evolution of the Meiji government's industrialization vision, narrowing the gap, and internal and external factors which contributed to this narrowing. The chapter emphasizes the importance of state leaders' seriousness in industrialization, their efforts to accumulate industrial knowledge within the government and understand the reality of industrial entrepreneurs, decision making based on economic rationality, and the presence of the private sector with vitality. The learning experience of Meiji Japan underscores the relevance and importance of dynamic capacity development approach, which focuses on real sector and step-by-step learning through concrete examples.

Chapter 4 focuses on the experience of Japan and Singapore, which successfully learned management technologies for quality and productivity improvement from abroad, with local adaptation, and organized national movements for their diffusion. Japan introduced productivity and quality control methods from the US in the early post-World War II era, and quickly assimilated and developed these as its own management practice (*Kaizen*). Singapore was the first country to receive Japan's comprehensive technical cooperation (1983–1990) in this field, and successfully internalized and institutionalized the Productivity Movement. Nevertheless, the two countries adopted different approaches. In Japan, the private sector took the initiative to create the core organizations responsible for promoting a national movement for quality and productivity improvement, while the Singaporean Productivity Movement was led by the government. This chapter also analyzes the key factors for their successes and draws implications for today's developing countries. The experience of Japan and Singapore suggests that national movements, if properly designed and implemented, are an effective way to promote societal learning and transform the popular mindset toward industrial society.

Chapter 5 shows how Japan cooperates in industrial promotion with developing countries seriously interested in policy learning and knowledge acquisition. Japan conducts bilateral industrial policy dialogue with the governments of developing countries on an ad hoc and request basis. Its concrete and practical features are derived from Japan's past development experience. Developing countries often seek Japanese advice when a new policy direction is needed against the background of domestic policy competition or pressure from international organizations. The four cases of Japan's policy dialogue are presented from Argentina (the Okita Report), Vietnam (the Ishikawa Project), Ethiopia (GRIPS-JICA), and Thailand (the Mizutani Plan). They collectively exemplify the common Japanese approach as well as flexible adjustment of dialogue content and modality for each country. The concept of translatable adaptation is stressed in which the learning government consciously modifies the foreign model to fit the local reality. The ingredients of successful bilateral policy dialogue include the strong commitment of the top national leader, country ownership, mutual respect and trust, and concrete actions and cooperation projects to realize proposed ideas.

Chapter 6 examines the development of the industry engagement system in Vietnam through a case study of the Hanoi University of Industry (HaUI). There is a world-wide consensus on the importance of industry engagement in TVET, and

'best practice' models are globally promoted. But there remains a question about how to build and institutionalize a workable system suitable to each country. This chapter analyzes how HaUI learned and adopted foreign models with localization. After studying various foreign models related to industry engagement, HaUI selected the Japanese training process management system, considering its capacities and the extent of support from industry. However, as translative adaptation is a dynamic process, it is predicted that HaUI will keep transforming the current model. The chapter finds three factors that enabled HaUI to undertake translative adaptation of the Japanese model: confidence building, capacity development, and strong ownership of those involved. It also discusses challenges of scaling up the HaUI experience to the national level, in part due to the insufficient involvement of government at the learning and adaptation stage.

Chapter 7 compares the 10-year achievements of JICA-supported *Kaizen* projects in Tunisia and Ethiopia and discusses the lessons learned. Tunisia and Ethiopia are front-runner countries in Africa which have been learning and developing their own models of *Kaizen* promotion. Three pillars are presented as essential elements for the sustainable development of *Kaizen* and are used as an analytical framework for the comparison: (i) vision, policy, and strategy; (ii) mechanism, organization, and system; and (iii) three levels of capacity (individual, organizational, and network levels). The comparative analysis shows the six factors that could importantly affect future *Kaizen* promotion in the two countries: (i) national leaders' commitment; (ii) political and administrative stability; (iii) organizational structure for *Kaizen* dissemination and development; (iv) counterpart and foreign expert teams in customization; (v) capacity required for advanced-level *Kaizen*; and (vi) industry-government-academia collaboration and the role of development cooperation.

Chapter 8 analyzes Thailand's experience with technology promotion and technical education by learning and localizing Japanese-style manufacturing, through two case studies of the Technology Promotion Association (Thailand-Japan) (TPA) and the Thai-Nichi Institute of Technology (TNI). TPA is a NPO established in 1973 by the initiative of Thai students and ex-trainees who studied in Japan, to promote the introduction and dissemination of new industrial technology from Japan for Thai people and enterprises. TNI is a technical education institute established in 2007 by TPA, with an emphasis on field-oriented, practical education for manufacturing and other industries. TPA and TNI successfully developed localized mechanisms for promoting industrial technologies, technical education, and training in industry circles and broader segments of the Thai society. The chapter also considers key factors for their success including the role of Japanese industrial cooperation. It also reviews their recent efforts to cope with the new challenges of industrialization in the age of digitalization, as well as the changing nature of the partnership between Thailand and Japan.

1.4.2.3 Translative Adaptation in a Changing World

Part III (Chaps. 9–10) considers the way forward and translative adaptation in the context of the new landscape of industrial development characterized by globalization, digital transformation, and pandemic.

Chapter 9 studies the human development aspects of *Kaizen*, with special attention to the relationships between the core capacities nurtured by this practice and non-cognitive skills. In the age of digitalization, non-cognitive skills—the personal attributes such as perseverance, self-control, and social skills—are becoming increasingly important because tasks that require such skills cannot be replaced easily by AI. This chapter reviews the evolution of *Kaizen* and its relation to theories of leadership, motivation, and capacity development. Based on cases of *Kaizen* promotion in Africa, it then argues that: (i) non-cognitive skills of adult workers can be developed through group activities of *Kaizen*; (ii) continuous efforts backed up by small successful experiences are important factors for adaptation amidst change; and (iii) further research on *Kaizen* in the context of psychology and behavioral science is required. In conclusion, the chapter emphasizes that *Kaizen* can improve not only quality and productivity of work but also human skills and capacities to enable proactive adaptation to change, which can bring support for the improved wellbeing of individuals in the coming era.

Chapter 10 presents the new industrial landscape by discussing contemporary mega-trends such as globalization, digitalization, and environmental response, and draws implications for developing countries and Japanese industrial development cooperation. The shape and scope of industrialization is rapidly changing with the expansion of GVCs, digital transformation, and the development of Industry 4.0. There is also a drive toward realizing inclusive and sustainable industrial development and enhancing economic and social resilience to ‘build back better’ after the COVID-19 crisis. The chapter discusses opportunities and new challenges for developing countries to accelerate industrialization in today’s context. As a benchmark case study, the chapter features the automotive industry, which is a giant transformative industry facing dynamic changes under the four mega-trends. Finally, it argues that while the basic nature of industrial policymaking remains the same, Japan needs to upgrade its capacity for industrial cooperation by adding new developmental values and instruments as well as promoting co-creation with developing countries—learning together, solving problems together, and facilitating mutual knowledge accumulation.

1.5 Findings of the Remaining Chapters and the Way Forward

The final section summarizes key findings from the analyses in the subsequent chapters and discusses their implications for today's developing countries and the international development community including Japan. This section is divided into two parts. The first part presents the findings related to the 'key ingredients of translatable adaptation and effective local learning' process (presented in Sect. 1.2.1), and the second part considers the implications of the new industrial landscape and the way forward.

1.5.1 *Findings Related to the Key Ingredients of Translatable Adaptation and Effective Local Learning*

There are five main points emerging throughout this book.

1.5.1.1 Passion for Learning to Industrialize

Passion for learning to industrialize is essential. Case studies suggest different patterns of learning initiatives by diverse actors, but they all confirm that enthusiasm and strong ownership on the part of the recipients are critical. Without this, local learning and translatable adaptation would not be possible.

The experience of Meiji modernization shows the intensity of the interest and seriousness of national leaders toward industrialization (Sect. 1.3.2, see also Chap. 3). In Singapore, it was Prime Minister Lee Kwan Yew who became convinced of the need to transform the mindset of workers and people for higher productivity, through meetings with Japanese business leaders. He himself launched the Productivity Movement and asked for Japanese cooperation to share its postwar experience of national movements (Chap. 4). In Ethiopia, Prime Minister Meles was eager to learn from East Asian development experiences. After learning about JICA's *Kaizen* cooperation in Tunisia, he immediately approached the Japanese ambassador in Ethiopia and requested Japanese assistance for *Kaizen* and an industrial policy dialogue (Chap. 5). In Vietnam, the General Secretary of the Communist Party, Do Muoi was greatly impressed with Shigeru Ishikawa's deep insights and recommendations on the strategy for Vietnam's market economy, which differed from the big bang approach widely implemented in Russia and Eastern Europe with the support of the international development community at that time. Do Muoi invited Ishikawa to advise the five-year development plan via diplomatic channels, in a search for policy options. This is how the Ishikawa Project began (Chap. 5).

Local learning initiatives should also come from the private sector, and not be limited to the national leaders mentioned above. Case studies also suggest that success stories, as observed in East Asia (Sect. 1.3.3), inspire others eager to learn, stimulate the ‘yes, we can’ spirit, and create a powerful demonstration effect.

1.5.1.2 Need for Systematic and Practical Learning

Learning methods matter. Passion is a prerequisite, but it is not enough. Case studies highlight the importance of systematic and practical learning by latecomer governments and society. In this regard, the three-step process of policy learning and translatative adaptation (Fig. 1.2) can serve as a useful reference, but there are some caveats to keep in mind.

First, when learning from foreign models, the recipient side needs to select appropriate benchmark countries and gather the necessary information in light of its own stage of development, the relevance of its sectors, and the specific issues to be considered. It is important not only to understand the general features of the best practice models, but also to identify what are the commonalities for success and what are the country-specific elements. Careful monitoring and necessary adjustments should be made in the process of testing and implementing the imported model, toward building a model that best fits the local context. In this regard, the case of HaUI shows how it introduced the Japanese model of industry engagement in TVET from the viewpoint of its current capacity and the extent of support from industry, after studying several foreign models through donor-funded projects (Chap. 6).

Second, the policy learning process does not end with the three stages (learning, adaptation, and scaling up). Some case studies show development beyond. Singapore, after learning productivity tools and the experience of a national movement from Japan in the 1980s, began to share its know-how with Asia and Africa. This is a phase of internationalization (Chap. 4). In Thailand, with the establishment of TNI, TPA has created a mechanism for promoting *monodzukuri* education in broader segments of the Thai society including youths and working adults, thus contributing to societal learning. More recently, TPA and TNI are actively engaged in sharing and teaching their experiences abroad, particularly with other Asian economies (Chap. 8).

1.5.1.3 Learning As a Dynamic Process

Learning is a dynamic process. Latecomer governments often face the dilemma of ‘the state as solution and problem’ [7], but case studies show that step-by-step enhancement of policy capability is possible. Meiji Japan is a brilliant example. After repeated trial and error over industrialization efforts, state 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 (Chap. 3). The other case studies of Japanese cooperation for industry engagement in HaUI (Chap. 6), *Kaizen* promotion in Tunisia and Ethiopia (Chap. 7), and technology promotion in Thailand

(Chap. 8) all show phased approaches to capacity development. Under these projects, initially, Japanese experts took the lead in teaching counterpart personnel, but with the emphasis on the training of trainers, local personnel have gradually acquired skills and knowledge and come to assume a leading role in teaching the other local human resources.

This is why we argue the usefulness of the dynamic capacity development approach to policy and societal learning.

1.5.1.4 Public–Private Partnership as a Key to Policy and Societal Learning

All of the case studies highlight the importance of public–private collaboration through different types of partnerships in promoting policy and societal learning. Three points are worth noting.

First, public–private partnership is essential for the government to understand the reality and needs of the private sector and enhance its capacity for industrial policymaking. Japanese MITI is well known for its effective partnerships with the private sector, within an arm’s length relationship. Through a deliberation council and other channels, government, public organizations, enterprises and their associations, and other stakeholders exchanged information and co-created innovative solutions (Chap. 2). These are the results of cumulative efforts from the time of Meiji Japan as mentioned above. As the Meiji government enhanced its policy capacity, and as the private sector grew, interactive communication between the government and private sector expanded and deepened (Chap. 3). In this way, the government can also learn from the private sector to enhance the content and quality of its industrial policy.

Second, public–private partnership is important to promote societal learning. The cases of Brazil (food value chain) and Chile (the salmon industry) show the role of specialized government R&D institutions in attaining many indigenous learning and innovation by sharing know-how and technology acquired through international cooperation with the private sector as public goods (Chap. 2). This process has substantially increased the productive capacity of newly established industries. In Thailand, as private sector initiatives, TPA (NPO) and TNI (university) have built multifaceted networks among industry, government, and academia both in Thailand and Japan (Chap. 8). These have contributed to amplifying learning opportunities and promoting technology dissemination within the industry circle and broader segments of the society.

At the same time, several projects point out the need for further efforts to strengthen public–private partnerships. The case studies from Tunisia and Ethiopia discuss the challenge of developing ‘network’ capacity for the sustainable development of *Kaizen* and suggest the need to develop industry associations and private *Kaizen* consultants and then to build industry-government-academia partnerships through a step-by-step approach (Chap. 7). This is because the private sector has an important role in disseminating *Kaizen* methods and philosophy through enterprise activities. The HaUI project in Vietnam also aims to build effective industry engagement in

TVET to supply young people with skills and knowledge that meet industry needs (Chap. 6).

Third, the degree of private sector dynamism greatly influences who initiate and lead societal learning. Where a dynamic private sector exists, it can take a lead in initiating, scaling-up, and sustaining a productivity movement, and the government can play a supportive role. This was exactly what happened in postwar Japan. However, if the private sector is weak as it was in the cases of Singapore and Ethiopia (Chaps. 4 and 7)—which is the situation in many developing countries, the government is better positioned to lead the process of the introduction, adaptation, and development of the productivity movement with societal participation. Private sector dynamism also includes the absorptive capacity to learn, adapt, and internalize foreign technology. This is where the level of education and training of the general workforce becomes important.

1.5.1.5 The Role of Development Cooperation in Enhancing Policy and Societal Capacity

Technology transfer through development cooperation is often characterized by an asymmetric balance of power. Nevertheless, case studies suggest that donors could play a role in facilitating translative adaptation and effective learning in partner countries if they are proactively engaged in understanding and accepting the values and views presented by local partners. Three points are worth noting.

First, when advising on ‘foreign models,’ donors should be mindful of providing a comparative perspective to the partner country, not just absolute advice on ‘international best practices.’ Comparative perspectives may include those across countries, regions, time, and sectors. In any comparison, there will be both commonalities and uniqueness. The key is to determine exactly what is common and what is unique, rather than general truth, and to build a model that best fits one’s own society (Chap. 5). The Ethiopia-Japan bilateral industrial policy dialogue provided much advice on benchmark countries by industry (e.g., automotive, apparel sector) and by function (e.g., FDI and local firm linkage building, handholding support, industrial park management, inter-ministerial policy coordination). This requires an enormous amount of knowledge, experience, and/or trial and error. This is why policy dialogue requires a lot of research, patience, flexibility, discovery, and innovation on both sides.

Second, case studies confirm that most Japanese industrial cooperation takes a hands-on approach with an emphasis on ‘learning by doing.’ Such an approach can be observed in JICA’s support to HaUI in Vietnam (Chap. 6) and *Kaizen* promotion in Tunisia and Ethiopia (Chap. 7). Chapter 6 points out that the accumulation of small successes, with hands-on assistance from Japanese experts, have contributed to their counterparts confidence by letting them decide to build their own institutions and mechanisms. But, it also admits that this approach alone is not sufficient to reach out to the policy level, and that weak government recognition and support may limit the national-level diffusion of the adapted model. Chapter 7 also recommends that for the

sustainable development of *Kaizen*, donors should work with partner countries from the early stages of the project to draw up three pillars (vision, policy, and strategy; mechanism, organization, and systems; and capacity (individual, organizational, and network levels).

Third, the above points suggest the importance of combining policy dialogue with concrete actions on the ground (Chap. 5). This should contribute to the scaling up and institutionalization of the adapted model, while helping to test the validity of the recommended policies through practical actions.

1.5.2 Implications of the New Industrial Landscape and the Way Forward

The shape of industrialization is rapidly changing in the twenty-first century, with digital transformation, a drive toward realizing inclusive and sustainable industrial development, and the expansion of GVCs. The COVID-19 crisis has further accelerated these mega-trends, although it is yet to be seen whether and how the COVID-19 and the recently intensifying geopolitical tensions might lead to the restructuring of global production networks. How will these contemporary mega-trends change the prospects for industrialization in developing countries? Based on the above findings and the analyses of the book chapters, we consider the implications of the new industrial landscape and the way forward from the following three perspectives.

1.5.2.1 What Aspects of Industrialization Prospects and Industrial Policymaking Will Change?

These contemporary mega-trends suggest that developing countries today have broadened opportunities to industrialize, through GVC participation, the creation of leapfrog technologies, and new business models emphasizing green and environmental sustainability (Chaps. 2 and 10). For example, as a result of deepening GVC, more opportunities are open for developing countries to host production process that can be adopted on a small scale based on comparative advantages. Because ‘industrialization can happen stage by stage in GVC (rather than sector by sector)’ ([6], p. 278), developing countries do not have to prepare a ‘full set’ industrial base, nor do they need to worry about the sequence of which industries to start with. The digital revolution may provide an opportunity 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)’ [68]. Aiginger and Rodrik [3] also propose a new focus of industrial policy that emphasizes green industrialization and employment concern.

In particular, digital technology is transforming the process of manufacturing, enhancing efficiency and connectivity of various industrial activities through the

Internet of Things (IoT), and driving innovation. It also contributes to creating new businesses, typically the modern service sectors with high productivity such as information and communications technology (ICT), financial services, business services, as well as start-ups which may lead to ‘leapfrog’ development. As a result, manufacturing and the other sectors are becoming interdependent and mutually reinforcing [11]. This is why currently, lively debates are underway as to whether manufacturing-centered industrialization, which was successful in East Asia in the late twentieth century, will remain a relevant development strategy for today’s latecomer countries and whether services will become the growth sector of the future [10, 35].

In any case, the new industrial landscape will require adapting prioritization (including the role of ICT industry, digital technologies and skills, environmental concern), speedy response to policymaking and implementation, a greater focus on ‘solution-driven’ functions, while taking enhanced approach to sustainability, inclusiveness, and resilience. As the case study of automotive industry shows, the industry will require not only improving the traditional manufacturing process but also incorporating the mobility concept and carbon neutral technology (Chap. 10). Thus, the broadened scope of industrialization will demand a cross-cutting perspective more than ever, and industrial policymaking will need a nationally integrated approach to address complex challenges instead of separate ministerial actions.

1.5.2.2 What Aspects Will Not Change and Will the Japanese Perspectives and Learning Methods Remain Relevant?

Nevertheless, even under the new industrial landscape, the nature of development challenges is unlikely to change fundamentally. While GVCs open a new way to industrialize, the most difficult challenge for developing countries is to strengthen the capacity of local firms and human resources so that they could achieve and sustain economic transformation and value creation. This requires intensified efforts for learning and translatable adaptation of the policy measures listed in the key areas of industrial policymaking suggested in Chap. 2 (also see Fig. 1.4). In Baldwin’s words, the new landscape may change the nature of the ‘master plan’ of industrialization [6]. But the new ‘master plan’ needs to be properly formulated and effectively implemented, with good understanding of the prevailing economic situation, the needs of the business sector, and the international environment. These are entirely different tasks.

Therefore, we argue that the methods for policy learning and learning from foreign models discussed in this book—such as ‘ingredients’ approach with real sector concern, the role of agencies tasked with industrial policy, close partnership with the private sector, and dynamic capacity development approach—remain valid even if the scope for industrialization becomes broader and digital technology can be used for speedy communication. These are common issues to be learned and acquired regardless of time and place. We also argue that the lens of translatable adaptation is more important than ever for developing countries today. Translatable adaptation requires that ‘any policy must be crafted and executed in the context of particular age,

society, and international environment’ ([48], p. 25). In an inter-connected world, developing countries are required to exercise more sophisticated capabilities under strong country ownership that includes all actors in society, not just governments. Problems are getting more complex and comprehensive. Now that new knowledge and technologies are easily and quickly available to many people in a standardized format, there is an even greater need for active and effective societal learning by various actors for industrialization.

Lastly, we would like to note that *Kaizen* can be revisited from this new industrial perspective.¹⁷ *Kaizen* encourages groupwork, voluntary participation, and the suggestion of original ideas, and can provide an important basis for developing core non-cognitive capacities required in the digital age (Chap. 9). Through quality and productivity improvement, it also has the potential to create renewed values such as: (i) approach to produce ‘incremental innovation;’ (ii) affinity with Industry 4.0 and digitalization; (iii) contribution to pandemic responses, e.g., sanitization and efficiency improvement; and (iv) contribution to inclusiveness through a human-centered bottom-up approach (Chap. 10).

1.5.2.3 Suggestions for the International Development Community and Japan: Toward Co-Learning, Co-Creating Knowledge, and Co-Solving Problem

We are now in the midst of major changes driven by globalization, digital transformation, pandemics, as well as increasing environmental and social concern. Moreover, the intensifying geopolitical situation is having a complex impact on the world’s economic prospects, including those of developing countries. However, the world is constantly facing changes. What is most important for developing countries is to foster the policy and societal capacity necessary to formulate and implement prescriptions for industrialization that are appropriate for the time, country and society in question. In doing so, it is necessary to distinguish between the common aspects that should be adopted regardless of time and place and the country-specific unique aspects, in order to create the appropriate policy package for respective countries. Having said this, let me conclude this chapter by making three suggestions for the international development community and more specifically, Japan.

First, the international development community should make greater efforts to promote knowledge sharing on industrialization experiences, by incorporating the perspective of translatable adaptation and local learning. The methods and content of knowledge sharing can be upgraded by including a comparative perspective of

¹⁷ This point is well explained in Akio Hosono’s closing remarks at the *Kaizen* seminar organized by the JICA Ogata Research Institute on February 27, 2020. With reference to stakeholder capitalism, Hosono stated: ‘*Kaizen* could be revisited from the perspective of these new initiatives’ (See https://www.jica.go.jp/jica-ri/news/topics/175nbg000019bubj-att/closing_remarks.pdf). The concept of stakeholder capitalism proposes that corporations should serve the interests of all their stakeholders including not just shareholders and investors but employees, customers, and the general public at large.

benchmarking countries—not just introducing a particular model of advanced countries—and embedding practical actions in the learning process (‘learning by doing’). It is also important to engage the recent industrializers—those countries that have succeeded in industrialization not long ago—in sharing their experiences, particularly in light of how they learned from other countries and ‘adopted and adapted’ foreign models suitable to their respective countries.

Second, Japan needs to make enhanced efforts in this endeavor by collaborating with the recent industrializers based on its long-standing development partnerships and by acting as a facilitator of local learning and translatable adaptation. Japan has fostered the ‘ingredients’ approach, field-orientation with hands-on approach through its experiences of industrial catch-up and development cooperation. These are the key elements of a dynamic capacity development approach and are tacitly understood and practiced by Japanese experts and professionals engaged in development cooperation. Therefore, more efforts are required to convert tacit knowledge into explicit knowledge so that these approaches and perspectives can be better utilized by other countries.

Lastly, it is increasingly important to emphasize the process of ‘co-creation.’ Japan (or advanced countries) must learn together with the partner countries and societies to find joint solutions (‘co-learning’ and ‘co-solving’). This is because the development challenges in the twenty-first century have become more complex, sometimes going beyond what Japan (or advanced countries) have experienced in the past decades. Leapfrog technologies may be more easily tested and practiced in developing countries. Japan should also build intellectual networks with the other industrializers systematically so that their relevant experiences can be shared with developing countries. In this process, Japan may wish to play a facilitating role so that they can incorporate translatable adaptation perspectives when sharing their industrialization experiences. Taken together, the process of ‘co-creation’ itself can be viewed as translatable adaptation and can contribute to creating new values for development cooperation including Japanese cooperation.

References

1. Abramovitz M (1986) Catching up, forging ahead, and falling behind. *J Econ Hist* 46(2):386–406
2. ACET (African Center for Economic Transformation), and JICA (Japan International Cooperation Agency) (2022) Transforming and building resilient economies in Africa: resetting priorities for the policy agenda in the post-COVID-19 era. ACET, Accra
3. Aiginger K, Rodrik D (2020) Rebirth of industrial policy and an agenda for the twenty-first century. *J Ind Compet Trade* 20:189–207
4. Amatsu K (2022) The learning process for state leaders and the ministry of industry in the early industrialization stage: the experience of Meiji Japan. In: Ohno I, Amatsu K, Hosono A (eds) Policy learning for industrial development and the role of development cooperation. JICA Ogata Sadako Research Institute for Peace and Development, Tokyo, pp 203–255
5. AU (African Union) (2013) The African Union agenda 2063: the Africa we want (Agenda 2063). <https://au.int/en/agenda2063/overview>

6. Baldwin R (2016) *The great convergence: information technology and the new globalization*. The Belknap Press of Harvard University Press, Cambridge, MA
7. Evans P (1992) The state as problem and solution: predation, embedded autonomy, and structural change. In: Haggard S, Kaufman RR (eds) *The politics of economic adjustment: international constraints, distributive conflicts, and the state*. Princeton University Press, Princeton, NJ, pp 139–181
8. Gershenkron A (1962) *Economic backwardness in historical perspective*. Harvard University Press, Cambridge, MA
9. Hashimoto H (ed) (2007) *Tozyōkoku ni okeru Nihonzin tyōki seisaku adobaizā taikenki* [Experiences of Japanese long-term policy advisors in developing countries]. International Institute for Advanced Studies, Kyoto
10. Hauge J, Chang H-J (2019) The role of manufacturing versus services in economic development. In: Bianchi P, Durán CR, Labory S (eds) *Transforming industrial policy for the digital age*. Edward Elgar, Cheltenham, pp 12–36
11. Helble M, Shepherd B (eds) (2019) *Leveraging services for development: prospects and policies*. Asian Development Bank Institute, Tokyo
12. Hosono A (2020) Kaizen toward learning, transformation, and high-quality growth: insights from outstanding experiences. In: Hosono A, Page J, Shimada G (eds) *Workers, managers, productivity-Kaizen in developing countries*. Palgrave Macmillan, New York, pp 45–67
13. Hosono A (2022) *SDGs, transformation, and quality growth: insights from international cooperation*. Springer Nature, Singapore
14. Hosono A, Page J, Shimada G (eds) (2020) *Workers, managers, productivity: Kaizen in developing countries*. Palgrave Macmillan, Singapore
15. Imai M (1986) *Kaizen: the key to Japan's competitive success*. McGraw-Hill, New York
16. Ishikawa S (1991) *Nihon no keizai kyōryoku to Azia: 'Kōzō tyōsei seisaku' wo koete* [Japan's economic cooperation and Asia: Beyond 'structural adjustment policy']. In: Minami R (ed) *Gekidō suru sekai to Nihon keizai* [Turbulent world and Japan's economy]. TBS Britannica, Tokyo, pp 152–191
17. Ishikawa S (2006) *Kokusai kaihatu seisaku kenkyū* [International development policy research]. Toyo Keizai, Tokyo
18. Ito H (2020) *Niti-Tyū keizai tisiki kōryū-kai* [Japan-China working group for exchange of economic information (1979–2000)]. ISS Contemporary Chinese Studies 20. Institute of Social Science, University of Tokyo, Tokyo
19. Iwasaki I (1996) *ASEAN syokoku no kanryōsei siron* [A reflection on the bureaucracy in ASEAN countries]. In: Iwasaki I, Hagiwara Y (eds) *ASEAN-syokoku no kanryōsei* [The bureaucracy in ASEAN countries]. IDE Research Series No. 460. Institute of Developing Economies-Japan External Trade Organization, Chiba, pp 269–304
20. JICA (Japan International Cooperation Agency) (1987) *Study on economic development of the Argentine Republic. Final Report*. JICA, Tokyo
21. JICA (Japan International Cooperation Agency) (2016) *Kaizen: Japan's approach towards improved quality and productivity: the driving force of Japan's rapid growth*. JICA, Tokyo
22. Jin K, Ohno I (2022) Overview: technology transfer for quality and productivity improvement in Africa and its implications for translatable adaptation. In: Jin K, Ohno I (eds) *Promoting quality and productivity improvement/Kaizen in Africa*. Research Project- Japanese Experiences of Industrial Development and Development Cooperation: Analysis of Translatable Adaptation Processes, vol. I. JICA Ogata Sadako Research Institute for Peace and Development, Tokyo, pp 1–33
23. Kikuchi T (2011) The roles of private organizations in the introduction, development and diffusion of production management technology in Japan. In: JICA and GRIPS Development Forum (ed) *Kaizen national movement: a study of quality and productivity improvement in Asia and Africa*. GRIPS Development Forum, Tokyo, pp 23–47 (Original paper was published in The bulletin of the graduate school of international cooperation studies, no. 4, 2011, Takushoku University)

24. Kikuchi T (2013) The quality and productivity improvement project in Tunisia: a comparison of Japanese and EU approaches. In: Ohno K, Ohno I (eds) *Eastern and Western ideas for African growth: diversity and complementarity in development aid*. Routledge-GRIPS Development Forum Studies. Routledge, Milton Park, Abingdon, Oxon, pp 170–186
25. Kim L (1997) *Imitation to innovation: the dynamics of Korea's technological learning*. Harvard Business School Press, Boston
26. Krueger AO (1974) The political economy of the rent-seeking society. *Am Econ Rev* 64(3):291–303
27. Lin JY, Zhang J (2019) Learning to catch up in a globalized world. In: Oqubay A, Ohno K (eds) *How nations learn: technological learning, industrial policy and catch-up*. Oxford University Press, Oxford, pp 149–172
28. Lutkenhorst W (2018) Creating wealth without labour: emerging contours of a new techno-economic landscape. DIE Discussion Paper, 11/2018. German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE)
29. Maegawa K (1998) The continuity of cultures and civilization: an introduction to the concept of translative adaptation. In: Ohno K, Ohno I (eds) *Japanese views on economic development: diverse paths to the market*. Routledge, London, pp 166–177 (Original in Japanese, published in *Hikaku Bunmei* [Comparative civilization] 10: 100–113. Tosui Shobo, Tokyo, 1994)
30. Maegawa K (2000) *Anthropology of development*. Shinyosha, Tokyo
31. MOFA (Ministry of Foreign Affairs) (1946) *Nihon keizai saiken no kihon mondai* [Basic issues of Japanese economic reconstruction]. Research Bureau, Ministry of Foreign Affairs, Tokyo
32. Nakagawa N (ed) (1997) *Intra Azia bōeki to sin kōgyōka* [Intra-Asian trade and new industrialization]. In: *The bulletin of Osaka City University institute of economic research* 46. Osaka City University Institute of Economic Research. University of Tokyo Press, Tokyo
33. Nakaoka T (2006) *Nihon kindai gizyutu no keisei: 'Dentō' to 'kindai' no dainamikusu* [The formation of modern Japanese technology: the dynamics of 'tradition' and 'modernity']. Asahi Shimbunsha, Tokyo
34. Nayyar D (2019) Foreword. In: Oqubay A, Ohno K (eds) *How nations learn: technological learning, industrial policy, and catch-up*. Oxford University Press, Oxford, pp vii–xi
35. Nayyar G, Hallward-Driemeier M, Davies E (2021) *At your services: the promise of services-led development*. World Bank, Washington, DC
36. Nihon Shiseki Kyokai (ed) (1983) *Okubo Toshimichi bunsyo* [Okubo Toshimichi documents] 5. The University of Tokyo Press, Tokyo
37. Nonaka I, Takeuchi H (1995) *The knowledge-creating company: how Japanese companies create the dynamics of innovation*. Oxford University Press, New York
38. Odagiri H, Goto A (1996) *Technology and industrial development of Japan: building capabilities by learning, innovation, and public policy*. Oxford University Press, Oxford
39. Ohno I (2011) Overview: national movements and the synthesis of selected country experiences. In: JICA and GRIPS Development Forum (ed) *Kaizen national movement, a study of quality and productivity improvement in Asia and Africa*. JICA and GRIPS Development Forum, Tokyo, pp 1–22
40. Ohno I (2013) The Japanese approach to growth support in developing countries: supporting dynamic capacity development. In: Ohno K, Ohno I (eds) *Eastern and Western ideas for African growth: diversity and complementarity in development aid*. Routledge-GRIPS Development Forum Studies. Routledge, London, pp 144–169
41. Ohno I (2022) Overview: Japanese perspectives on industrial development and the concept of translative adaptation. In: Ohno I, Amatsu K, Hosono A (eds) *Policy learning for industrial development and the role of development cooperation. Research Project-Japanese experiences of industrial development and development cooperation: analysis of translative adaptation processes, vol I*. JICA Ogata Sadako Research Institute for Peace and Development, Tokyo, pp 1–55
42. Ohno I, Hosono A, Amatsu K (2022) The way forward: industrialization challenges and implications for Japanese development policy support. In: Ohno I, Amatsu K, Hosono A (eds) *Policy learning for industrial development and the role of development cooperation*. JICA Ogata Sadako Research Institute for Peace and Development, Tokyo, pp 423–443

43. Ohno I, Mekonen GT (2022) National movements for quality and productivity improvement in Japan and Singapore: from a perspective of translatative adaptation. In: Jin K, Ohno I (eds) Promoting quality and productivity improvement/Kaizen in Africa. JICA Ogata Sadako Research Institute for Peace and Development, Tokyo, pp 35–76
44. Ohno I, Ohno K (2012) Dynamic capacity development: what Africa can learn from industrial policy formulation in Asia. In: Noman A, Botchwey K, Stein H, Stiglitz JE (eds) Good growth and governance in Africa: rethinking development strategies. The Initiative for Policy Dialogue Series. Oxford University Press, Oxford, pp. 221–245
45. Ohno I, Ohno K (2013) Eastern and Western ideas for African growth. *World Financial Review* July/August 2013:41–44
46. Ohno K (1998) Overview: creating the market economy. In: Ohno K, Ohno I (eds) Japanese views on economic development: diverse paths to the market. Routledge, London, pp 1–50
47. Ohno K (2000) Tozyōkoku no globalization: Zirituteki hatten wa kanouka [Globalization of developing countries: is autonomous development possible?]. Toyo Keizai, Tokyo
48. Ohno K (2013) Learning to industrialize: from given growth to policy-aided value creation. Routledge-GRIPS Development Forum Studies. Routledge, London
49. Ohno K (2018) The history of Japanese economic development: origins of private dynamism and policy competence. Routledge, Milton Park, Abingdon, Oxon
50. Okawa K, Kohama H (1989) Lectures on developing economies: Japan's experience and its relevance. University of Tokyo Press, Tokyo
51. Oqubay A, Ohno K (eds) (2019) How nations learn: technological learning, industrial policy, and catch-up. Oxford University Press, Oxford
52. Polanyi K (1944) The great transformation: the political and economic origins of our time. Beacon Press, Boston
53. PSI (Policy Studies Institute), and GRIPS (National Graduate Institute for Policy Studies) (2020) Ethiopia productivity report. PSI, Addis Ababa
54. Rodrik D (2008) Normalizing industrial policy. Commission on Growth and Development Working Paper 3. World Bank, Washington, DC
55. Shimomura Y (2020) Nihon-gata kaihatu kyōryoku no keisei: Seisakusi I [Formation of Japanese-style development cooperation: policy history 1, until the 1980s]. University of Tokyo Press, Tokyo
56. Stiglitz JE (1998) Towards a new paradigm for development: strategies, policies, and processes. The 1998 Prebisch Lecture at UNCTAD, Geneva, October 19, 1998
57. Stiglitz JE (2016) The state, the market, and development. United Nations University World Institute for Development Economics Research (WIDER) Working Paper 2016/1, January. UNU, New York
58. Stiglitz JE, Greenwald BC (eds) (2014) Creating a learning society: a new approach to growth, development, and social progress. Columbia University Press, New York
59. Takabayashi J (2006) Higasi Azia no kōgyōka to gizyutu keisei: Niti-Tyū ASEAN no keiken ni manabu [Industrialization and technology formation in East Asia: learning from the experiences of Japan, ASEAN, and China]. Minerva Press, Kyoto
60. Taniura T (1990) Azia no kōgyōka to gizyutu iten [Industrialization and technology transfer in Asia]. Institute of Developing Economies, Tokyo
61. Umetani N (1968) Oyatoi gaikokuzin 1: Gaiyou [Hired foreign advisors 1: Overview]. Kajima Research Institute Publishing House, Tokyo
62. Vogel E (1991) The four little dragons: the spread of industrialization in East Asia. Harvard University Press, Cambridge, MA
63. Wada M (2022) The role and characteristics of industrial policy in postwar industrial recovery and development in Japan: implications for developing countries. In: Ohno I, Amatsu K, Hosono A (eds) Policy learning for industrial development and the role of development cooperation. JICA Ogata Sadako Research Institute for Peace and Development, Tokyo, pp 151–201
64. World Bank (1988) *Project performance audit report: China university development project (loan 2021-CHA and credit 1167-CHA)*. December 30, 1988. Report 7561. World Bank, Washington, DC

65. World Bank (1995) *Project completion report: second university development project (credit 1551-CHA)*. May 19. Report 14530-CHA. World Bank, Washington, DC
66. World Bank (1998) *World development report 1998/99: knowledge for development*. Oxford University Press, New York
67. Yanagihara T (1998) Development and dynamic efficiency: ‘framework approach’ versus ‘ingredients approach.’ In: Ohno K, Ohno I (eds) *Japanese views on economic development: diverse paths to the market*. Routledge, London, pp 70–76
68. Yayboke E, Crumpler W, Carter WA (2020) The need for a leapfrog strategy. Center for Strategic and International Studies. Published April 10, 2020. <https://www.csis.org/analysis/need-leapfrog-strategy>
69. Yeo G, Yam TK, Giap TK (2019) Learning and catch-up in Singapore: lessons for developing countries. In: Oqubay A, Ohno K (eds) *How nations learn: technological learning, industrial policy, and catch-up*. Oxford University Press, Oxford, pp 173–204
70. Zhang Y (2008) Kōsite ‘kaikaku kaihō’ wa hazimatta [This is how ‘reform and opening up’ began]. People’s China internet version. Posted November 19, 2008. http://www.peoplechina.com.cn/zhongrijiaoliu/2008-11/19/content_165464.htm

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