



# Openness and Coordination

National Economies of  
the U.S., Japan, and Germany  
in a Globalized World

Hyeong-ki Kwon



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## PREFACE

The concept of globalization came to me as a big shock before I left to study in the U.S. in 1995. As an undergraduate in the mid-1980s, the most eye-catching topic was democratization and the welfare state for my country, Korea, which replaced the existing goals of national modernization and economic growth that had dominated Korean society since the 1950s. When globalization first appeared in Korea, it seemed just political rhetoric to people focused on domestic power politics for welfare democracy. However, when the 1997 Asian financial crisis rippled through Korean society, globalization quickly emerged as a major concern for all.

Suffering a serious crisis that required urgent financial aid from the IMF, Koreans had to reconsider their social paradigms and value systems, whether voluntarily chosen or forcibly. They believed they had no option but to adopt liberalization and openness to the outside world. Koreans' thinking and lifestyles have changed fundamentally. Korea's existing statist developmentalism, long considered a model for economic growth and development for low-developed countries, was suddenly condemned as *Crony Capitalism* overnight, and the belief that democracy would solve every problem seemed to lose its place. No matter what one believed, national developmentalism or democracy, the existing beliefs fell into distrust, while globalization seemed irresistible and neoliberal free markets gained ascendancy as the only viable model.

In the 2000s and 2010s, when Korea moved beyond the crisis and grew rapidly through globalization, and flexibly adapted to rapidly

changing technologies such as digitalization, globalization was no longer a buzzword or cause for concern. We acknowledged that we live in a globalized world, and still do, more open to a rapidly changing world. However, neoliberalism, regarded as the single viable alternative, reveals serious problems and limits in a globalized world. What alternative models are available? If the traditional one-nation-based model is no longer viable, how should a national economy be reconstructed in a globalized world?

By exploring three advanced capitalist countries—the U.S., Japan, and Germany, *Openness and Coordination* examines viable alternatives in response to the challenges of an open and rapidly changing world, and how such different patterns are newly constructed. In order to account for the various effects of globalization and modes of recomposing national economies, I have studied diverse models, including the U.S. as a liberal free market, Japan and Korea as statist coordination models, and Germany as a social coordination model. Concerning the evolution of Korea's statist coordination model, I draw it from my work *Changes by Competition: The Evolution of the South Korean Developmental State* (Oxford University Press, 2021). Now, *Openness and Coordination* focuses on these three types of advanced capitalism. This book highlights how each nation-state constructs industrial and innovative commons to improve national competitiveness in the process of national corporations' globalization and focuses on the politics of coordination: how actors coordinate with various interests to create industrial commons.

Over two decades have passed since I began research on globalization and diverse nation-states' responses, with a particular interest in the globalization of production. Over that span of time, I have come to owe much to many who have supported my work. I would like to express my sincere gratitude to all of them. First, I express deep gratitude to my teachers, especially to Professor Chey Myung and the late Professor Hwang Soo-Ik at Seoul National University, and to Professor Gary Herrigel at the University of Chicago. I also thank Professor Glenn Morgan at the University of Bristol for kind and insightful comments. In addition, I express my sincere gratitude to my colleagues, including Professors Chang Jae Baik, Joo Myung Song, Ha-lyong Jung, and Haeran Lim, who in 2008 formed a research team under the theme of "Globalization of Production." And I express sincere gratitude to many of my students, including Kyung Mi Kim, Eun-sik Yoo, Wonbin Choi, Yoo Lim, Seung-mi Kim, Ji-young Jeon, Hyun Lee, and Eun-young Cho,

who researched data and created figures to illustrate the fruits of my research. This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2020S1A3A2A01095861). I send my sincere gratitude for the Institute's support.

Finally, I would like to express my gratitude to my beloved brothers Oh-sung Kwon, Oh-soo Kwon, and my lovely sister Jung-hee Kwon. I also express many thanks to my mother-in-law Woojo Park, who consistently took care of my family during the whole research process. Above all, I would like to send my sincere gratitude to my wife Jung-hee Choi, who has always quietly helped and encouraged me. Without her assistance, I confess, this long-term project would not have been possible. Also, I express my sincere gratitude to Woo-hyuk Kwon, my lovely son who remains a bright light even in difficult times, and always invigorates me with joy and the vitality in his existence itself. Lastly, I want to express my immeasurable respect and gratitude to my parents, which cannot be fully expressed in words. I dedicate this book to my parents, Taekyong Kwon and Youngja Ko, who never let go of their faith in their son, even when I fumbled around pursuing somewhat vain and clumsy dreams, or when I edged toward precarious despair. I am deeply grateful that they have always believed in and felt proud of their son.

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# Introduction

What is the most viable model of national economy in a globalized world? How can we make it? *Openness and Coordination* examines how three nations representing diverse economic systems, including the free-market liberal U.S., the statist model of Japan, and the social coordination model of Germany, have redefined and reconstituted their national economies to face the dissolution of their existing national economic systems in a rapidly changing world.

Today, as technological development, including digitalization and nanotechnology, proceeds at a dizzying pace, and international competition accelerates day by day, companies can no longer stick to their existing production methods. They must innovate their entire value chains, by absorbing new ideas, adapting to new technologies and changing games. To meet these challenges, major corporations within national economies have been forced to reorganize themselves beyond their national boundaries in order to survive. Even top-tier and single-nation producers must enter the flow of rapid change in order to embrace new ideas and better inputs. Reorganization of entire value chains across national borders has become an irresistible trend.

For example, Apple's iPhone 14 Plus could not be produced in a decoupled and traditional one-nation-based system. The iPhone 14 Plus depends on worldwide resources, parts, and ideas of hardware chip designers and software engineers in Cupertino, the worldwide ecologic

applications developers, the remarkable productivity of the Shenzhen Pearl River Delta industrial complex, the excellent chip manufacturers in Taiwan, and semiconductor production machine designers and producers of ASML in the Netherlands and applied materials in San Jose (DeLong 2023). If we stick to the traditional single-nation production system or decouple the cross-border capabilities, we cannot produce such an extraordinary device at such a ridiculously low price. Due to the excellence and ascendancy of global production networks over the traditional single-nation model, global production networks over the last several decades have become inevitable and indispensable.

Events such as COVID-19 pandemic, wars in Ukraine and elsewhere, and the U.S. war for hegemony disrupt the existing system of global chains, drawing attention to the vulnerability of global value chains. Still, they have not brought an end to the trend of global production, nor reverted industrial nations back to traditional, single-nation models of production. Global production networks (GPNs) are still a trend because corporations cannot abandon GPNs' remarkable efficiency over traditional single-nation production. According to Oxford Economics' 2023 extensive analysis of bilateral cross-border trade of intermediate goods (IGs) that more accurately represent supply chain componentry than the final products in most analyses, global supply chains have continued to expand, despite talk of deglobalization and nearshoring (Nguyen-Quoc 2023; Kornprobst and Paul 2021; Felbermayr 2023). Even though decoupling has materialized for China's trade with the U.S. and Japan, China's inputs increased in trade with the Group of Seven (G7) developed economies. Despite de-risking, global value chains have not diminished but realigned. Intensified international competition has forced these companies to realign their methods of production at global levels, in order to mobilize labor, skills, parts, design, and R&D for competitive advantage beyond their national borders (Yeung 2022; Ponte 2019: 3–22; Herrigel 2010: 139–186; Dicken 2011: 13–74, 429–453). Now, a large number of corporations, representing their national economies, are reorganizing production competitively to survive in the international arena.

Yet serious tension arises between these national corporations' self-interests and survival and the overall interests of their national economies. Japanese enterprises such as Toyota captured enormous profits due to globalized production in 2008, while the Japanese national economy suffered from a production decrease of about US\$420 billion and a loss of

one million jobs (The Economist, 20 November 2010). And while American automobile and electronics firms have increased their production worldwide since the 1990s, domestic employment by these enterprises decreased to 66.5% in 2019, compared to employment in 1998 (OECD 2020; STAN Industrial Analysis 2020). The U.S. government attempted to limit imports from China to lower trade deficits and offset the loss of domestic employment. However, such a move contradicts business interests of American enterprises producing their products in China, as seen in the case where U.S. semiconductor industrialists opposed the U.S. government's tariff actions against China's Huawei (Bown 2020: 26–27).<sup>1</sup>

The perception of how national economies are constituted, alongside national corporations' globalization, is fundamentally changing. The past perception that “GM's interests are the interests of the U.S.” (Holstein 2009: xi; Gereffi and Sturgeon 2004: 13)<sup>2</sup> made sense until the 1980s. But GM now produces and manufactures a larger number of vehicles overseas, in order to survive in international competition (Wall Street Journal 29 April 2005; US Newswire 13 November 2008). Toyota of Japan, in contrast, had been regarded as a main target of competitive vigilance as a foreign enterprise, but that, too, is no longer the case. Toyota is now perceived as a significant contributor to the U.S. economy because it produces a larger amount of value and employment in the U.S. compared with American-based companies (Berger 2005: 39; Wall Street Journal 29 April 2005). Robert Reich, the former Secretary of the Department of Labor in the Clinton administration, averred that “nationality not mattering” has become a universal trend which almost all nations will follow (Reich 1991: 172).

<sup>1</sup> The U.S. companies oppose the government's national protectionist and industrial policies against China. See Semiconductor Industry Association (June 15, 2018) “SIA Statement on Trump Administration Tariff Announcement,” from <https://www.semiconductors.org/sia-statement-on-trump-administration-tariff-announcement/>; Semiconductor Manufacturing Industry Association (August 24, 2020) “SEMI Statement on New U.S. Export Control Regulations,” *SEMI Press Release* from <https://www.semi.org/en/news-media-press/semi-press-releases/semi-export-control>.

<sup>2</sup> IN 1953, General Motors President Charles E. Wilson testified before Congress as follows: “For years, I thought what was good for our country was good for General Motors and vice versa. The differences did not exist. Our company is too big. It goes with the welfare of the country” (Holstein 2009: ix).



*Openness and Coordination* examines the tensions between the national economy and corporations' globalization and diverse ways of readjusting their nations' economies in the process of globalization. We focus on the major advanced economies, such as the U.S., Japan, and Germany, through the lens of these questions:

Does the globalization of national corporations' production necessarily conflict with their nations' economies? Despite the globalization of production, can national economies and corporate globalization be compatible? How can national economies reconstitute themselves in an era of corporate globalization? This book highlights that not only the impacts of corporate globalization upon national economies but also the ways nations adjust to these impacts vary across nations. What kinds of patterns could assist the reconstitution of national economies in the course of corporate globalization? What actions can lead to impactful solutions?

Global production networks, or global value chains, have been fortified by the optimistic views of neoliberalism. Refuting the pessimistic concern that national economies may experience deindustrialization as major corporations take production offshore, neoliberals argue that overseas production will strengthen national economic competitiveness. They hold that overseas outsourcing results in lower costs for parts, and creates a profit surplus, which increases investment in new technologies and creates more national wealth and more jobs for the nation's workers. Neoliberals suggest that the freer the flow of goods, humans, and capital across national borders, the more nations prosper (World Bank 2020; Friedman 2005; Farrell et al. 2003; Sirkin et al. 2011; Ramaswamy and Rowthorn 2000; Bhagwati 2010a, 2010b).

Considering the remarkable efficiency of global value chains over the traditional one-nation-based system, Global Value Chain (GVC) literature also emphasizes openness and flat-flow of inputs at the global level, accepting neoliberal theories, including comparative advantages, and neoliberal skepticism toward the state's active intervention (Singh 2023: 4–5; Werner 2016: 458–460). GVC literature suggests neoliberal policies, including liberalization of trade and investment and open links to global networks in order to develop the national economy (World Bank 2020; Aichele and Heiland 2018; Yeung 2022; Bair 2009; Gibbon et al. 2008).

Yet contrary to neoliberal and GVC optimism, not all states reap good results through national corporations' globalization. Some countries, such as Germany and South Korea, successfully strengthen their

industrial competitiveness through globalization, while others like the U.S. do not. Then, why do certain countries succeed in upgrading their industrial competence in the globalization process of national corporations while others fail? How could the optimistic scenario of neoliberalism be realized? How can national economies increase their own industrial and innovative capabilities in the course of national corporations' globalization?

By comparing the different adjustments of the U.S., Japan, and Germany in the course of their national corporations' globalization, *Openness and Coordination* argues that in contrast to neoliberalism, globalization does not automatically result in the strengthening of national economic competitiveness. And in contrast to any nationalistic pessimism, we hold that national corporations' globalization does not necessarily cause the hollowing out of domestic production. The effects of corporations' globalization vary across national economies. While the U.S. and Japan have experienced a weakening of domestic industrial capabilities by losing much of their "industrial commons,"<sup>3</sup> Germany and South Korea have significantly improved industrial competitiveness and domestic production capabilities by establishing innovative industrial ecosystems at home while corporations go overseas.

In contrast to neoliberal globalism and recent GVC literature, openness to the free flow of inputs, including new technology, better parts, and innovative ideas, does not automatically lead to optimal outcomes. For example, as we shall see in the case of the U.S., individual companies' uncoordinated and free pursuit of individual rationality of maximizing profits in the course of globalization results in suboptimal outcomes and loss of industrial commons and innovation capabilities at the national economic level. Uncoordinated free globalization leads corporations to drift apart from their existing domestic industrial ecosystem, which can engender a dissipation of their industrial commons (Pisano and Shih 2012a, 2012b). Free relocation of national corporations to foreign countries can undermine the sustainability of the industrial commons at home

<sup>3</sup> "Industrial commons" refers to various complementary capabilities shared and commonly used by corporations, such as suppliers, customers, partners, skilled workers, universities, and research institutes and capital institutes. Firms do not rely entirely on their own materials and capital, but they need and utilize many complementary capabilities or industrial commons in order to improve their competitiveness in the market. Thus, the industrial commons are key sources of national economic competitiveness (Pisano and Shih 2012b; Berger 2013).

due to the hollowing out of specialized supplier networks, competitors, and qualified workforce, as well as experienced managers (Barzotto et al. 2018: 96).

Nevertheless, sustaining the given industrial commons without openness to a rapidly changing world can engender suboptimal outcomes. National protectionism or a nationally closed coordination system, as in the case of Japan, prohibits national firms from flexibly absorbing new ideas and better inputs, and from adapting to a rapidly changing world. Japanese firms based on closed circles of compensation might have better coordination capabilities than U.S. firms in the liberal open market, but they are relatively isolated from a changing world, showing so-called Galapagos syndrome (Calder 2017; Kushida 2011). Thus, even in their globalization, Japanese firms lagged behind innovation due to their nationally closed or Keiretsu-based networks on foreign soils.

*Openness and Coordination* highlights that industrial commons at home are a decisive factor in whether a national economy succeeds or fails in the course of national corporations' globalization. Industrial commons are the fundamental sources of innovation. As Janssen and Frenken (2019) argue, future innovation should aim at cross-specialization to reap the benefits of unrelated varieties. However, this collaboration of cross-specialization can be facilitated by interfaces based on common themes, and needs platforms or intermediaries—for example, the form in which to materialize. Industrial commons refer to the external economies which companies widely use in a district, such as R&D and manufacturing infrastructure, process-development skills, engineering capabilities embedded in firms, universities, and other organizations, that provide the foundation for growth and innovation (Pisano and Shih 2012b: 2). Industrial commons are rooted in firms, and also firmly geographically embedded (Götz 2019: 27; Pisano and Shih 2012b; Bailey and de Propis 2014; Buciuni and Pisano 2015).

The overseas production of multinational corporations can be beneficial not only for the companies themselves but also for the home economy. As international business literature shows, outward foreign direct investments are positively associated with sales increases for investing firms and their suppliers (Castellani and Pieri 2015: 2). In addition, domestic production can benefit from involvement in GVCs by learning from the strategies applied by global buyers (Barzotto et al. 2018: 99; Schmitz and Knorringa 2000). Openness to global networks can foster the development of links outside the home-based industrial

district, and enrich the industrial commons at home, through reverse learning from overseas experiences and the introduction of new ideas and better inputs.

However, corporations' uncoordinated free mobility can also have negative effects to deteriorate the innovation capabilities at home by the loss of industrial commons. The fading of industrial commons can accompany the reduction of knowledge spillovers which need innovation in an economy (Capello and Lenzi 2015). The hollowing out of manufacturing activities due to corporations' overseas production has negative impacts on their home productivity growth and new job creation (Castellani and Pieri 2015; Bailey et al. 2010). Corporations' internationalization can have negative effects on the home production structure and reduce the reproducibility of the entrepreneurial factor or result in the erosion of the industrial commons, including loss of local suppliers and loss of the opportunity to learn and grow through a relationship with lead firms (De Marchi and Grandinetti 2014; Elia et al. 2009; Berger 2013; Barzotto et al. 2018: 94).

Why do some countries succeed in improving innovation and production capabilities at home in corporations' globalization, while others do not? Again, this book highlights the industrial commons as the decisive factor for success. National economies which lose their industrial commons in the course of corporations' globalization will lose their economic competitiveness. By contrast, national economies which improve their industrial commons will achieve economic competitiveness despite any globalization of production.

The problem of how to improve the domestic industrial commons mainly relies on how to resolve the free-rider problems and coordinate collective action among various actors who are free to move their activities overseas. The use of industrial commons is difficult to exclude from potential beneficiaries, and thus it can easily fall into the situation of "tragedy of commons" and rapidly disappear (Barzotto et al. 2018; Götz 2019: 27).

Problem-solving collective action in corporate globalization varies across national economies, with diverse solutions coming mainly from key actors' strategies and interactions in historical and institutional contexts. For instance, the free market in the U.S. could foster high innovation for American enterprises. But, the free market could negatively affect the accumulation and improvement of domestic industrial commons. As we shall see, large U.S. corporations which pursue shareholder values in

the absence of social coordination, easily undermine existing relationships with their local suppliers.

In contrast to the American free-market system, the statist coordination of Japan and the social coordination of Germany could more efficiently resolve the collective action problems and improve the industrial commons. Industrial commons are more likely to be built with key players' collaboration, resulting from societywide coordination. In the case of Germany, key actors, including labor organizations, suppliers, and trade associations, as well as lead firms and suppliers, collectively adjusted their processes of globalization. This form of social coordination improves the industrial commons at home even in the course of increasing overseas production.

However, trust and social coordination are needed among social actors for horizontal collaboration to build industrial commons; they cannot be built in a closed structure. Japan developed trustful relations to solve free-rider problems and build collaborative relations, based on the nationally closed circles of compensation and isolated from a changing world, even in the course of globalization. Japan's industrial commons became outdated and Japan suffered a long-term recession. Thus, *Openness and Coordination* emphasizes that in order to improve a national economy's innovation and production capabilities in the course of corporations' globalization, social coordination with openness to a rapidly changing world of technology and international markets is needed; social coordination within a closed structure or openness without social coordination is more likely to fail in building industrial commons at home and lose in international competitiveness.

To examine the various national adjustments in the course of corporate globalization, *Openness and Coordination* analyzes high-tech industries, such as electronics, automobiles, and ICT industries, which are major export drivers for the U.S., Japan, and Germany, and constitute core parts of their national economies. I focus on major high-tech industries because industries such as textiles and apparel have declined even apart from globalization. By contrast, high-tech industries are major export drivers as well as the key engine to national economic growth. These industries have seriously pursued the globalization of production, and serve as case studies on the impacts of corporate globalization upon national economies and their various outcomes in national adjustments.

## LITERATURE REVIEW AND THEORETICAL ALTERNATIVE

We now briefly review prevailing views, including neoliberal optimism and pessimistic nationalism, regarding corporate globalization's impacts on national economies. Based on the critical review of existing theories, this section suggests a theoretical alternative.

Globalization of national corporations in advanced economies, including the U.S., Japan, and Germany, has generated significant concern about the hollowing out of domestic industries. In fact, corporations in these countries often threaten labor and government with their possible decisions to move production facilities overseas (Story 2012). Concern over the hollowing out of domestic industries leads pessimistic nationalists to suggest nationalist counter-measures, such as protectionism and an appeal to moral patriotism (Prestowitz 2010). A few states in the U.S. also passed laws that limit excessive outsourcing overseas in response to corporations' outsourcing practices. In the case of Japan, key players in the Japanese economy, including economic policy-makers and *Keidanren* (Japan Business Federation) emphasize Japanese patriotism, criticizing neoliberal groups such as *Keizai Doyukai* (Japan Association of Corporate Executives) which emphasize American-style shareholder capitalism and free market (Gotoh 2020: 135).

However, such nationalist policies based on a single-nation production model cannot effectively work in the new context of global competition based on the existing global production networks, which generate far more efficient and innovative achievements than a production system based in one nation. South Korean electronics companies in the early 1990s, for instance, could not avoid expanding production overseas, because they suffered from the disadvantages of single-nation-based production systems in competition with Japanese global production networks which combined Japanese high technologies and East Asian low-wage labor. As a result, South Korean companies expanded their production chains overseas to meet international competition. Clearly, nationalistic protection would have proved costly, while making it difficult for firms to catch up with high-speed technology innovation, as in the case of Japan, which suffered a long-lasting economic recession due to the so-called Galapagos syndrome, resulting from the nationally closed circles of compensation (Calder 2017; Kushida 2011).

In contrast to nationalist protectionism, neoliberal globalism emphasizes enhancing national competitiveness by optimally combining a variety

of inputs, such as labor, skills, parts, and design, across national borders. Based on the theory of comparative advantage, neoliberals argue that globalization of companies is beneficial not only for the home economy but also for the host countries (Sirkin et al. 2011; Bhagwati 2010a, 2010b; Friedman 2005; Farrell et al. 2003; Ramaswamy and Rowthorn 2000). According to neoliberals, the outsourcing of advanced countries' corporations to developing countries like India could offer the developing countries opportunities to enhance human capital by increasing employment. As for the advanced home countries, the offshoring by their national corporations maximizes profits through cost reduction, which can result in more investment in new high-value-added industries, thereby creating opportunities for new employment. For neoliberals, the loss of domestic employment in the course of corporations' globalization is a kind of creative destruction by which they optimize the dynamic comparative advantages in the process of globalization. Neoliberals argue that the creative process of resource allocation should be done only through the operation of free markets; intervention of the state, or non-market social constraints, prevent the optimal solution of resource allocation (Pack and Saggi 2006: 276).

Reflecting upon the remarkable efficiency of global value chains over traditional single-nation system, GVC literature also emphasizes openness and flat-flow of inputs at global levels, confirming neoliberal globalism and convergence toward Washington Consensus for national economic development (Singh 2023: 4–5; Werner 2016: 458–460). Although GVC literature began over concern with asymmetrical power relations and uneven developments, they refocused their study on the mutual benefits reaped by global firms and local suppliers. Accepting neoliberal theories, including comparative advantages, and neoliberal skepticism toward the state's active interventionism, they argue for lowering tariff barriers and trade costs, investment liberalization, and little government intervention in markets, but fostering business-friendly environments to enable firms to make rapid and reliable connections with foreign partners (World Bank 2020; Aichele and Heiland 2018; Yeung 2022; Bair 2009; Gibbon et al. 2008).

However, unlike the GVC literature and neoliberals' argument for universal validation of free markets and openness to global value chains, upgrading from a low-value-added to a high-value-added economy does not automatically occur through free markets and uncoordinated open links to global value chains. Contrary to neoliberals' expectation, profit

surplus created by American corporations' offshoring, for instance, may not be reinvested in upgrading domestic industries. As we will examine in Chapter 3, the U.S. trade deficit in high-tech industries since the 1990s has been severely aggravated with deficit amounts of US\$178.1 billion in 2020—a dramatic drop from US\$3.5 billion of surplus in 1990, while the U.S. goods trade deficit ballooned to a record \$1.09 trillion in 2021 from \$198 billion in 1996 (U.S. Census Bureau data). Economist Gregory Tassej points out that such trade deficit growth is due to the R&D expenditures of U.S. corporations which increased overseas while decreasing at home (Tassej 2010: 283–333). Also, as suggested by MIT and Harvard studies, the reduction of R&D within the U.S. is related to the loss of industrial commons, including the decline of parts suppliers and the loss of high-skilled labor in the course of American corporations' offshoring (Berger 2013: 20, 204–205; Porter and Rivkin 2012: 54–62).

By focusing on the quantitative aspect of value creation, neoliberals disregard the qualitative aspect of industrial linkages which have equally important effects in the sense of industrial and innovative capabilities. For example, neoliberals like Jagdish Bhagwati argue that if we earn the same profit, say \$100, it does not matter whether we make potato chips or semiconductor chips (Bhagwati 2010a, 2010b). However, what neoliberal economists like Bhagwati overlook is the external effects of the industrial linkages, which an industry has on the innovation capabilities of other neighboring industries. Potato chips making \$100 in profits may have the same value in the sense of value amount as semiconductor chips making a \$100 profit. But their external effects in regard to innovative capabilities of other industries and an entire society are significantly different.

Neoliberalists overlook the fact that there is a marked difference in production capacity for computer chips and potato chips in terms of a country's collective technology and innovation capabilities. So-called “spillover effects” on other industries are drastically different between producing computer chips and potato chips. The former significantly increases overall productivity in society, while the latter does not. Cheap potato chips cannot produce Intel. Knowledge embedded in a relationship is not a simple product that can be bought and sold. Quantitative capital and intangible capabilities of a nation are not the same. Workers' talents and skills, organizational knowledge and institutional memory, and the industrial commons are not easily transferred to other regions, simply because experiential knowledge is embedded in organizational life. Moreover, the spillover effects, learning effects, and network effects



of corporate activities are critical to the competitiveness of the entire national economy (Iversen and Soskice 2019: 1–4, 14–20; Atkinson and Ezell 2012: 94–95, 97). Innovation in one industry affects other industries. Therefore, potato chip production cannot keep up with the effect of computer chip production technology on front and rear industries. No matter how global a country is, if the industry that makes computer chips is lost abroad, it will result in the loss of entire industrial systems, including front and rear industries and various industrial commons simultaneously.

From the perspective of overall industrial capabilities based on industrial linkages, *Openness and Coordination* highlights the industrial commons as a decisive factor in whether a national economy can improve its innovation and production capabilities or not in the course of national corporations' globalization. As Janssen and Frenken (2019) argue, the collaboration of cross-specialization based on rich industrial commons is critically important for future innovation. Industrial commons refer to the common externalities for innovation, which can be necessary and utilized by more than one industry. Pisano and Shih (2009, 2012b) define industrial commons as critical components for innovation and competition, including encompassing knowledge, skills, institutions, and a broad R&D environment. Industrial commons, including technological know-how, operational capabilities, and specialized skills, are embedded in the workforce, competitors, suppliers, customers, cooperative R&D ventures, and universities, and often support multiple industrial sectors (Pisano and Shih 2009, 2012b; Barzotto et al. 2018: 96; Götz 2019: 27).

Individual companies need the industrial commons to compete in the market, since on their own they cannot make all of these goods. The industrial commons must be produced socially. They transcend financial value, and embed, animate, and support the industrial linkages produced through social interactions. Hence, we oppose the normative arguments that neoliberals such as Bhagwati pose, that potato chips and micro-semiconductor chips are the same if they produce the same value. We assume that even if they produce the same profits and wages, the potato chips and the microchips have significantly different external effects on the neighboring industries in terms of the effects of their productive capability in the industrial linkages.<sup>4</sup> For example, in the 2000s, the IT industry's

<sup>4</sup> In this work, I criticize the neoclassical economist conception of value theory and emphasize the productive capability and complementarity of the industrial commons. I

value should be considered not only for the value it created but also for its external effects that significantly increase the productivity and innovative capability of its neighboring industries.

From the perspective of industrial linkages and industrial commons, in contrast to the recent growth model literature which focuses on diverse models of demand management (Baccaro et al. 2022; Baccaro and Pontusson 2016), *Openness and Coordination* highlights the manufacturing and industrial capabilities for a nation’s long-term growth (Carlin and Soskice 2015). Although demand management is important for economic growth, production, and innovation capabilities are critical for increasing productivity and long-term prosperity. If technology-based growth and innovation capabilities are not properly improved, household income structurally decreases, despite the economy’s ups and downs. For example, from the 1950s to 1970s, the U.S. was able to dominate the global market and achieve economic growth based on superior technological competitive advantage. However, as commercialization of technology

rely on Friedrich List’s conception of “the theory of productive forces” (Theorie der produktiven Kräfte) that criticizes Adam Smith’s value theory (Die Theorie der Werte). So far, List’s (2016 [1910]) *Das Nationale System der Politischen Oekonomie* has been understood as protectionism—a misunderstanding. List also suggests the opening of trade, rather than protectionism, if it improves the productive capability. List holds that the improvement of industrial capability matters regardless of opening or protection. He argues not protectionism but the theory of productive capability. According to List, Adam Smith did not develop further the conception of “productive forces” by focusing on the simple quantity of exchange value. Thereafter Smithian economists, including Jean Baptiste Say, who emphasize only the exchange value, disregard the different productive capabilities that resulted from various actors’ complementary relations in the division of labor. According to List, the classical economists including Smith and Say emphasize the amount of exchange value in a national economy, and do not see how significantly different are the effects of manufacturing and agriculture on productive capabilities in the entire society. For example, agriculture currently produces the value of 3.3 billion dollars, 10 times more than manufacturing which produces 0.2 billion dollars. Thus, classical economists like Say may emphasize agriculture 10 times more than manufacturing. But List holds that classical economists do not see how agriculture’s production currently relies on manufacturing’s external effects on productive capabilities. List holds that the government’s constructing of roads and bridges may not produce any exchange value in the market, but construction of infrastructure improves significantly the productive capabilities in the entire society. List also says that social institutions and laws may not produce any exchange value, but they significantly improve the productive capabilities of an entire society because they contribute to the combination of various labor. The industrial and innovative capabilities in a society rely on how to combine the various actors’ labor and roles, rather than individual excellence. See Friedrich List’s (2016 [1910]) *Das National System der Politischen Oekonomie*. 2nd version (Verlag von Gustav Fischer).

weakened, short-term economic activity and recession occurred over the past 20 years, but GDP growth rates decreased significantly compared to earlier (Tassey 2023: 1–2; Tassey 2014). Technology innovation brings long-term productivity, which in turn increases industrial competitiveness and market share, ensuring higher profits and incomes through long-term economic growth. Innovation requires industrial and technological commons such as new technologies, prototype labs, skilled labor, and technical infrastructure (Tassey 2023: 1–2).

To better understand how a nation's innovation capabilities rely on industrial linkages, we must look at the entire process of production, from concept development and prototype development to mass production and commercialization. In many cases, innovation and learning occur not only in the early stages of production but also in the process of moving to the prototype and commercialization stages. Innovation for production of high-value-added products is not determined solely by one or two brilliant ideas early on, but occurs through close interaction with researchers and designers, engineers, and high-skilled workers, in various stages of production and in every part-making process.

Notably, in contrast to neoliberal globalists' optimism and recent GVC literature, openness to global value chains and the rapidly changing world of technology does not automatically lead to national economic competitiveness. And in contrast to the nationalists' pessimism, national corporations' offshoring and overseas expansion do not necessarily hollow out the domestic industrial commons. Some countries succeed in improving their industrial competitiveness in the course of corporations' globalization, while others do not.

For example, in the process of overseas outsourcing, the U.S. has faced serious problems with loss of innovation capabilities because the uncoordinated globalization of individual corporations results in the loss of industrial commons and industrial linkages at home, including excellent parts suppliers, prototype makers, skilled laborers, and technology and training systems (Pisano and Shih 2012a, 2012b; Berger 2013; Porter and Rivkin 2012; Kochan 2012). By contrast, Germany and South Korea have upgraded domestic industrial capabilities in the course of globalization. Since the 2000s Germany and Korea have increased their trade surplus and employment in high-tech industries, despite a significant increase in overseas production.

Why do some countries succeed in improving production and innovation capabilities, while others do not? *Openness and Coordination*

highlights not only openness to a rapidly changing world of technology and markets but more importantly, social coordination for building and improving industrial commons in the course of globalization. In order to build industrial commons, we emphasize, first, openness to a rapidly changing world of technology and markets. In the absence of openness, as in the case of Japan, too much coordination based on nationally closed circles of compensation can lead to stagnation or outdatedness of industrial commons, resulting in long-term economic recession. By contrast, simple openness without social coordination, as in the case of U.S., and individual companies' uncoordinated and free pursuit of individual rationality of maximizing profits in the course of globalization result in suboptimal outcomes and loss of industrial commons and innovation capabilities at the national economic level. Thus, *Openness and Coordination* highlights social coordination to build and improve industrial commons at home while national corporations go abroad.

In order to understand the multiple effects of national corporations' globalization on national economies, we focus on national coordination for creating industrial commons. Individual companies pay little attention to improvements and accumulation of industrial commons; their focus, instead, is on self-interests of profit maximization. Thus, an individual corporation's self-interest in the course of globalization can result in suboptimal outcomes in the national economy, such as the hollowing out of national industries, reduction in employment, and deterioration of productive and innovative capabilities across an entire national economy. The free and uncoordinated pursuit of individual business interests can create the so-called tragedy of industrial commons due to a free-rider perspective or resistance to collective action. Different outcomes rely on the *politics of coordination*—in other words, how to solve collective action problems in the course of national corporations' globalization.

Furthermore, *Openness and Coordination* emphasizes diversity of methods in societywide coordination to build the industrial commons. For example, Germany and Korea differ in their methods of improving innovation capabilities. Germany has achieved these improvements through a social coordination system, while South Korea has used active state intervention and coordination rather than a free-market system or social coordination. In the early 2020s, the U.S. and Japan also used state-led coordination methods to build the industrial commons in response to the decline of their industrial competitiveness.

*Openness and Coordination* highlights that the politics of coordination in creating industrial commons follow a variety of patterns, which are formed by key actors' proactive adaptations to new challenges against a backdrop of existing historical experiences and institutions. For instance, we will explore three distinct patterns of coordination politics, through the lens of Max Weber's ideal type.<sup>5</sup> These three patterns include the U.S. free-market system, the statist coordination model of Japan and South Korea, and the social coordination model of Germany.

Contrary to neoliberal arguments, social coordination or state intervention does not yield only negative effects. Still, not all interventionist states are always valid. For example, traditional and authoritarian developmental states, which previously existed in South Korea and Japan, may not produce a new innovative system. The traditional developmental states, with highly centralized authority, which focused on mobilizing massive amounts of capital and funneling it exclusively to a few corporations to realize an economy of scale, may not be valid for nurturing SME parts suppliers, nor building a flexible and decentralized innovation system in which various competent players can participate and collaborate for innovation. In Japan and South Korea, statist coordination must change existing developmentalism from the traditional and exclusive strategy to a more inclusive and decentralized form of developmentalism based on social cooperative networks.

While neoliberal and GVC theories disregard the effectiveness of state coordination, *Openness and Coordination* agrees with recent twenty-first Century Developmental State theories which emphasize the state's active role in coordination politics for building the industrial commons. Further, this book agrees that twenty-first century national economies depend not on inputs such as large infusions of capital, but on qualitative innovation capabilities of human capital and education (Williams 2014; Stiglitz et al. 2013; Evans 2010; Evans and Heller 2015). The twenty-first Century Developmental State theories emphasize that the method of economic growth should shift from large-scale capital accumulation to individual human capital-oriented innovation. According to this point of view, economic growth since the 1990s has been achieved not by the

<sup>5</sup> Weber's ideal type means not a reality, but what has been arrived at by the analytical accentuation of certain elements of reality in order to understand the reality. Only through ideal types does the individual case become explicit. See Weber (1949) "Objectivity in Social Science and Social Policy."

input of production factors such as capital and labor but through new ways of generating innovative ideas and information. Here, the personal capabilities of workers, and citizens in general, are the essential factors for economic growth. Therefore, societal support, education, and democratic institutions are emphasized to increase citizens' capabilities in today's developmental state theories.

However, we point out one limitation: twenty-first century developmental state theorists focus on improving individual human resources rather than on combining and organizing competent actors, that is, the systemic industrial linkages and commons. As twenty-first century developmental state theories argue, the driving force for economic growth has shifted from the accumulation of physical capital to the expansion of innovation capabilities and knowledge. However, we do not accept the simple causal relationship between economic growth and individual citizens' capabilities. For example, the decline in U.S. industrial competitiveness in the process of globalization is not due primarily to a setback in U.S. education or a reduction in new ideas from U.S. citizens. Rather, the decline is due to many holes in the industrial linkages, resulting from uncoordinated free globalization. Although U.S. universities generate world-class ideas, the commercialization of new ideas and innovation at the industrial level has grown feeble due to the loss of complementary goods as individual corporations freely move overseas in pursuit of short-term profits.

Contrary to the argument of new developmental theorists (Evans 2014: 37), large sums of money invested in education and social supports do not necessarily engender economic growth and industrial capabilities. France in the 2000s turned public expenditures from industrial policy to social policy while changing modes of developmentalism. However, as the expansion of social support expenditures soon reduced public support for R&D, the expansion of those expenditures made France a "social anesthesia state," pushing it into a long-term recession rather than strengthening the nation's innovation and production capabilities (Levy 2015: 402–403). By contrast, Northern European countries, such as Sweden and Denmark, were able to make a successful economic leap forward not by strengthening traditional social safety nets but by increasing their innovation capabilities through public investment (Huo and Stephens 2015: 410–425; Eliasson 2007: 214, 279). Support for social welfare and education matters in developing individual competencies which ultimately may contribute to the improvement of innovation