



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

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Chapter 9

Future of Industrial Policies

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Introduction

In addition to analyzing the developmental directions affecting the economic system, including the challenges presented in the previous chapter, which categorizes Thailand as a country experiencing delayed or stalled industrial development—a critical point to be cautious of in national development planning—Thailand has exhibited strengths and received international recognition and research attention. A comparative case study of the automotive industry between Thailand and Malaysia illustrates this vividly. The outcomes clearly demonstrate Thailand's success, positioning it as a central hub for global automobile production at both regional and international levels, while Malaysia faced setbacks. Thailand's policy implementation has led it to become a hub for global automotive production.

In addition to the above case study, serving as an example for future industrial policy development considerations, this chapter delves into issues that should be taken into account when formulating industrial policies. It emphasizes the importance and alignment with the country's global potential regarding changes in production and trade structures. It also suggests the selection of industries and positions in the global value chain to maximize benefits in line with the country's capabilities. The subsequent content in this chapter presents key considerations for industrial policy, taking into account the significance and alignment with the agricultural sector, natural resources, and the service sector.

9.1 Failure of Malaysia and Success of Thailand in the Automotive Industry

According to Baldwin (2011), from 1970 to 1982, Malaysia's automotive industry focused on assembling components, and the small-sized existing market was divided among numerous entrepreneurs. The market decentralization made it challenging for component manufacturers to achieve economies of scale, resulting in expensive components and parts produced in the country. These factors hindered domestic production growth. In 1979, domestic production accounted for only 8% on average.

Various policies were increasingly supervised by the state under Prime Minister Mahathir bin Mohamad. In 1981, he established the Heavy Industries Corporation of Malaysia (HICOM), a state-owned company with the objective of creating a comprehensive automotive industry, similar to Japan's model. It aimed to establish the entire supply chain, known as the "National Car Project" or Proton. The project was launched in collaboration with Mitsubishi (HICOM held 70% of the shares).



Figure 9.1: Proton Saga (left) and Mitsubishi Lancer (right)

Source: Wikipedia public domain photos

Unfortunately, the results of this initial effort became evident in 1985, coinciding with the onset of the second unbundling era in industrial development. Proton Saga was priced 20-30% lower than its equivalent models in the country, leading to a market share increase of 73%.

Exports began in 1989, primarily targeting the United Kingdom under the Generalized System of Preferences (GSP) program, allowing duty-free entry for up to 14,000 units. This enabled these products to be sold at lower prices in Malaysia (Wad & Chandra, 2011). Proton evolved by assembling critical components and parts locally. However, local production faced challenges, and Proton continued to rely on Mitsubishi for technology and design. Despite success in exports and the domestic market, Proton's sales volume remained low by industry standards (less than 100,000 units per year for each model).

The second major push occurred in the 1990s when Proton introduced new car models with different engine sizes. Malaysia's production doubled from 1990 to 1997. Proton's plans expanded with the announcement of the "Proton City" project, aiming to become a comprehensive automotive manufacturing town, increasing production capacity to 250,000 units by 2003. During Proton's expansion, the second national car company, Perodua, was established (a joint venture with Daihatsu, producing the Kancil model). The 1997 financial crisis prompted a realization that the dream of ISI (Import Substitution Industrialization) had come to an end. The strategy of creating supply chains, similar to what Japan and South Korea had done, was no longer feasible after the second unbundling era. The diversity of component production from various locations was no longer viable and suitable after the second unbundling era, essentially ending the strategy of import substitution.

However, Malaysia continued to implement strategies from the 1980s. Perodua was sold to Japanese investors, while Proton underwent a change of nationality in 2000. A new advanced facility, Tanjung Malim, with a production capacity of 500,000 units per year, was established. Proton introduced the Waja, the first car

designed by Malaysians, with technological assistance from the UK-based Lotus, which Proton had acquired. In 2002, Proton shifted its position in the value chain towards producing its own engines. However, due to high production costs, Proton's market share in the country continuously declined until 2010. Seeking international partners, the government looked beyond four decades of import substitution, resulting in approximately 50,000 jobs (70% of the automotive workforce) for Proton and Perodua by 2011 (Wad & Chandra, 2011).

In the 1960s, Thailand's automotive industry aimed at the entire value chain, starting with Completely Knocked Down (CKD) assembly. The Thai Board of Investment motivated car manufacturers from the United States, Japan, and Europe by continuously adjusting local component use ratios and tax rates for industrial protection. Japanese component suppliers established production bases in Thailand, responding to requests from Japanese entrepreneurs, fostering a long-standing and strengthened relationship. Japanese entrepreneurs developed a local parts supplier network by enhancing the quality of local component companies through various technical assistance.

Economic slowdowns and rapid local production growth led GM, Ford, and Fiat to withdraw in the early 1980s, just before Thailand's GDP growth surged. Car sales in the country increased significantly from 1987, coinciding with the period when Japanese car companies adapted their production models for the second unbundling era. This was different from Malaysia, as Thailand abandoned the old model (ISI) and drove industrial growth based on the new wave (second unbundling and export-led growth).

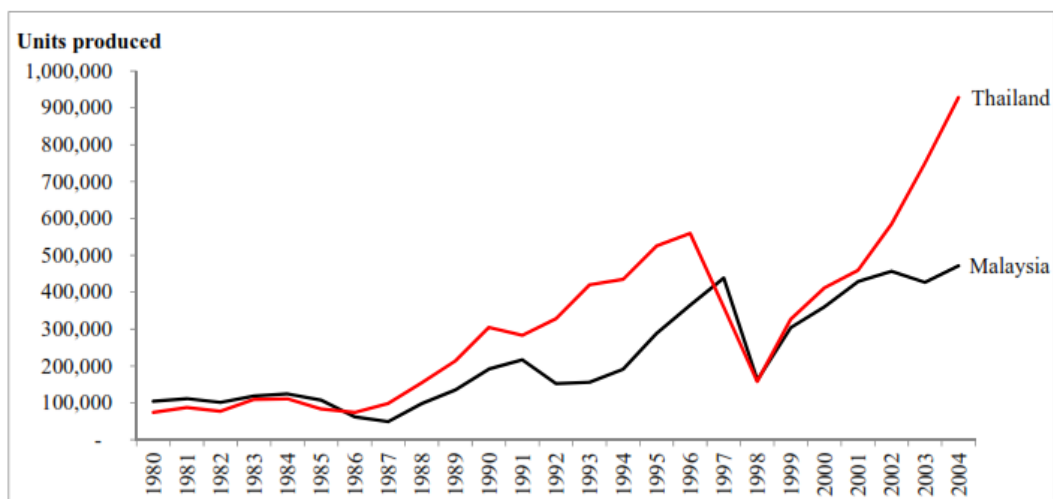


Figure 9.2: Number of Exported Cars (1980 - 2004)

Source: Baldwin (2011)

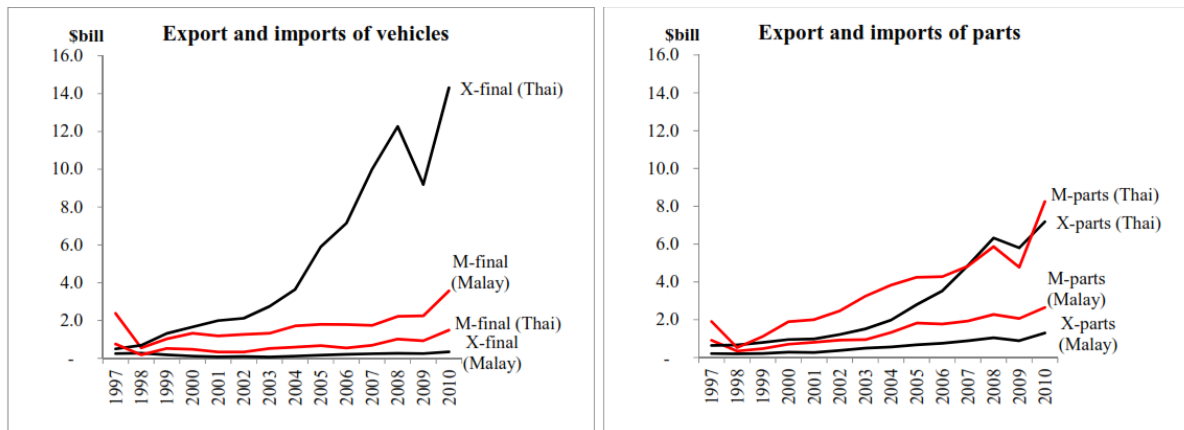


Figure 9.3: Value of Exported and Imported Automotive Parts (1997 - 2010)
Source: Baldwin (2011)

9.2 Automobile Industry in Southeast Asia - Malaysia and Thailand

An analysis by Ward (2009) and Ward & Chandra (2011) recognizes the automobile industry as an "industry of industries" in the 20th century and considers it one of the most globally integrated industries today. This industry has been dominated by large international corporations that collectively established a vertically integrated structure until the 1970s, which can be characterized as a Producer-Driven Global Value Chain (PD-GVC). Since then, structural adjustments and outsourcing waves have led to a globally interconnected and increasingly entrepreneur-driven control of the industry, particularly by original equipment manufacturers (OEMs).

However, experts in the automobile industry have contested the notion that the global automobile industry is inherently interesting and might lead to unprofitable competition due to:

- Intense competition, leading to overcapacity.
- Low-profitability capabilities.
- Slow or relatively inflexible production structures.
- Over-expanded and excessively diversified product lines.

Additionally, there has been a continuous evolution of production methods and manufacturing system development to move beyond traditional manufacturing. This evolution can be observed through:

- Ford's assembly line and mass production standards.
- GM's expansion of production scope and the location of manufacturing.
- Toyota's lean production concept aimed at continuous cost reduction and creating completeness in production.

The success of national car projects in Asian countries has become a significant research topic for those following the Global Value Chain (GVC) theory. This is because the automotive industry is not only a globally competitive industry but also an industry with significant capital, research, and development at an intensive level. These factors come with challenges when entering the market and demand efficiency in terms of scale, scope, and production speed. Thus, the national car projects in some countries are considered futile efforts and inefficient investments, with potential alternative applications that might be more effective.

9.2.1 Framing the Automobile Industry in ASEAN within the Global and Regional Value Chain

Concerning Global Value Chains (GVCs), the automobile industry is considered a Producer-Driven Global Value Chain (PD-GVC), contrasting with examples like the global garment industry, which is driven by buyers (Buyer-Driven Global Value Chain or BD-GVC). Original Equipment Manufacturers (OEMs) control the automotive value chain through technology control and core product control. Different types of organizations are used to control the upstream and downstream processes (Wad 2008):

- Vertical integration (as seen in historical American companies).
- Collaborative working vertically (as seen in the keiretsu network of Japan).
- Collaborative working horizontally (as seen in companies in continental Europe).

Japan achieved success in challenging the dominance of Western powers in the 1970s and 1980s, leading to increased competition and trade wars between Japan, the United States, Europe, and global shifts in the automotive industry. During this period, Western OEMs left the Southeast Asian OEMs, allowing Japanese OEMs to dominate and become market leaders in the region.

From a historical perspective, Akamatsu (1962) proposed the "flying geese pattern of development" for Japan in the 1930s. According to this view, the development of the automobile industry in a country has been transferred to the production structure of keiretsu in the regional context. This led to the transformation of Japan's automobile industry, initially focused on domestic production, into a leader driving the flock of geese across Southeast Asia. This was followed by Japanese suppliers spreading across the region.

In line with this developmental pattern, many local-level companies have endeavored to develop themselves to link with top-tier companies in the production pyramid. The pattern of dispersed production bases in the region is crucial for the evolution of the automotive industry in Southeast Asia. This pattern mirrors the global value chain of the automotive industry and results in

the regional value chain receiving significant impetus from Japanese OEMs and major suppliers since the 1970s.

9.2.2 Post-1997 Financial Crisis Trends in the Automobile Industry in ASEAN-5

The production of personal and commercial vehicles increased in all countries from 2000 to 2007. However, the Thai automotive industry experienced significant growth, nearly quadrupling production, or an increase of approximately 285% (Figure 9.4).

The distribution of labor types in the ASEAN-5 automotive industry in 2000 showed that Thailand focused on commercial vehicle production, while Malaysia was the primary location for the production of personal vehicles, followed by Indonesia and Vietnam, emphasizing passenger car production (Figure 9.5).

Country	2000	2002	2004	2006	2007	Change 2000–2007	Percentage of change
Malaysia	284,600	395,000	372,916	502,973	413,440	128,840	45
Thailand	325,888	595,649	927,981	1,193,903	1,238,460	912,572	280
Indonesia	292,710	299,257	408,311	296,008	419,040	126,330	43
The Philippines	41,840	53,683	70,728	41,603	42,000	160	0
Vietnam	6862	13,197	19,868	18,211	20,750	13,888	202

Note: All types of motor vehicles (passenger cars, light commercial vehicles, heavy trucks, busses). Changes 2000–2007 own calculation. The figures for Indonesia, the Philippines and Vietnam are estimates in certain years. Sources: OICA correspondents survey, various years. Available from: <http://www.OICA.net> [Accessed 5 June 2006 and 17 March 2008].

Figure 9.4: Number of Exported Cars 2000 – 2007

Source: Wad (2009)

Country	2000		2007		Change in % points
	Passenger cars	P.c. of total	Passenger cars	P.c. of total	
Malaysia	258,500	91	328,300	79	27
Thailand	135,888	42	308,500	25	127
Indonesia	257,058	88	304,300	73	18
The Philippines	15,540	37	33,000	79	112
Vietnam	5062	74	20,000	96	295

Note: All 2007 car figures are estimates.

Source: Same as Table 2. Percentage of passenger cars to total motor vehicle production based on Table 2.

Figure 9.5 Comparison of the Number of Cars Produced 2000 – 2007

Source: Wad (2009)

In the following seven years, Thailand became more specialized in commercial vehicle production. Meanwhile, the Philippines shifted to producing personal vehicles, and Vietnam increased its focus on automotive components. Thailand's specific capabilities led to the production of one-ton pickup trucks by OEMs from various countries, establishing Thailand as a global hub for pickup truck production outside the United States.

However, due to significant growth, Thailand now has a comparable number of personal vehicles to Indonesia and Malaysia. If this trend continues, Thailand is poised to become the automotive production hub in ASEAN without a doubt. Malaysia's choice as the center for personal vehicle production in the Southeast Asian group will likely disappear.

Vehicle production in Thailand was lower than sales in Malaysia, Indonesia, the Philippines, and Vietnam in 2000 and 2007, indicating a net import situation (Figure 9.6). The significant increase in exports from Thailand reduced reliance on the domestic market, leading to rapid growth in automotive assembly and doubling car sales. In the Philippines, sales increased, but production declined after 2004, suggesting that trade regulations for international car transactions became more liberal. Additionally, the importation of used cars competed with new locally assembled cars.

During 2000-2002, a total of 1.87 million cars were sold in ASEAN-6 (including Singapore). This indicates that the automotive market in ASEAN emerged with the complete integration of free trade.

Country	2000	2002	2004	2006	2007	Change 2000–2007	% change
Malaysia	343,173	433,840	487,605	490,768	487,176	144,003	42
Thailand	262,109	409,459	626,026	682,500	631,250	369,141	141
Indonesia	309,514	317,763	483,094	317,312	434,499	124,985	40
The Philippines	84,132	85,587	88,075	99,541	117,903	33,771	40
Vietnam	16,549	32,093	40,138	40,823	40,823	24,274	147

Source: www.just-auto.com. Available from (data 2000–2002): http://www.just-auto.com/images/features/feb03/0302asia783_02 [Accessed 13 March 2008]; (data 2004–2007) <http://www.just-auto.com/articleprint.aspx?ID=93863> [Accessed 13 February 2008].

Figure 9.6: Number of Cars Sold in Each Country 2000 – 2007

Source: Wad (2009).

Thailand's automotive industry demonstrated greater efficiency in the production of commercial vehicles compared to the other four ASEAN-5 countries. Thailand was the sole industry in ASEAN-5 that exhibited a trade surplus in both exports and imports of vehicles in 2000, 2004, and 2006. The trade surplus exceeded

400% during this period, surpassing the growth in vehicle production (Figure 9.7). In contrast, all other ASEAN-5 countries experienced a trade deficit in the automotive sector.

Thailand's trade surplus was twice the total trade deficit of the other four ASEAN-5 countries combined (excluding Vietnam). Malaysia managed to halt the increase in its automotive trade deficit from 2004 to 2006, while Indonesia began reducing its trade deficit, decreasing from \$790 million in 2004 to \$600 million in 2006. The trade of automotive components served as the second-ranking indicator of trade efficiency in the post-financial crisis period among the ASEAN-5 automotive industries. This trade among the countries reflects the production efficiency of each nation in this industry (Figure 9.8).

Country	2000			2004			2006		
	Export	Import	Surplus	Export	Import	Surplus	Export	Import	Surplus
Malaysia	105.8	1255.2	-1149.4	117.9	1683.0	-1570.1	209.4	1720.4	-1511.0
Thailand	1620.8	442.8	1178.0	3652.2	538.0	3114.2	6608.9	519.7	6089.2
Indonesia	22.4	352.6	-330.2	150.0	939.2	-789.2	411.4	1013.7	-602.3
The Philippines	5.4	622.6	-617.2	159.8	439.7	-279.9	91.9	705.6	-613.7
Vietnam	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Note: Calculation of surplus is done by author.

Source: UNCOMTRADE, HS 1992; motor vehicles 8702 and 8703 and 8704.

Figure 9.7: Export, Import, and Trade Balance of Automotive Sector
Source: Wad (2009)

Country	2000			2004			2006		
	Export	Import	Surplus	Export	Import	Surplus	Export	Import	Surplus
Malaysia	134.8	298.3	-163.5	276.1	617.7	-341.6	424.7	985.7	-561.0
Thailand	503.7	1335.2	-831.5	1412.0	2944.3	-1532.3	2500.2	2558.6	-58.4
Indonesia	221.8	1120.3	-898.5	532.6	986.4	-453.8	908.5	904.2	4.3
The Philippines	568.4	230.8	337.6	1172.3	388.9	783.4	1400.3	353.5	1046.8
Vietnam	n.a.	n.a.	n.a.	54.2	32.2	22.0	n.a.	n.a.	n.a.

Note: Calculation of surplus is done by author.

Source: UNCOMTRADE, HS 1992; parts and accessories of motor vehicle 8708.

Figure 9.8: Export, Import, and Trade Balance of Automotive Components
Source: Wad (2009)

The automotive industry in ASEAN-5 significantly influences employment, productivity, investments, and public revenue, thereby impacting both the

economy and society. However, gathering comprehensive data for the ASEAN-5 group is challenging. The International Organization of Motor Vehicle Manufacturers (OICA) provides partial information for the year 2004, mainly compiled by automakers (not automotive component companies), covering the production of vehicles (Figure 9.10).

Thailand's automotive industry excels in generating employment and productivity. The investment criteria for Thailand and Indonesia are not directly comparable. OICA reveals income-related data only for Thailand. Estimates for employment in the ASEAN-4 during the early 2000s ranged between 200,000 and 300,000 for vehicle assembly and an additional 100,000 to 150,000 for automotive components (roughly half of vehicle assembly employment). This totals between 300,000 and 450,000 jobs. The International Metalworkers' Federation (IMF) stated that in 2004, Japan employed 185,700 workers in vehicle assembly and 460,500 in automotive components.

Another crucial question is how labor in the automotive industry uplifts income levels, such as net income per hour or purchasing power. According to the IMF, the income hierarchy is as follows:

- Germany and the United States have the highest labor income.
- Japan, France, and South Korea fall in the mid-range.
- Thailand, Malaysia, Indonesia, and the Philippines are in the lower-income bracket (IMF, 2007).

	Employment (persons)	Turnover (mio. €)	Investments (mio. €)	Public revenue (mio. €)
Malaysia	47,000	6084	1263	n.a.
Thailand	182,300*	11,658 [#]	443	2871
Indonesia	64,000	3858	1071	n.a.
The Philippines	n.a	n.a	n.a	n.a
Vietnam	n.a	n.a	n.a	n.a

Figure 9.10: Impact on Employment, Value of Employment, Investments, and Government Revenue

Source: Wad (2009)

Motor vehicle industry (LV and MHV)		Net hourly earnings local currency	Net hourly earnings (US\$ PP)	Hours and minutes	Hours and minutes, mid-sized auto
Country	Year				
Malaysia	1997	5.41 R	1.81	20 min	7460 h 57 min
	1999	n.a.	n.a.	n.a.	n.a.
	2001	3.56 R	0.94	41½ min	12,359 h 33 min
	2005	n.a.	n.a.	n.a.	n.a.
Thailand	1997	45.91 B	1.51	29 min	17,425 h 4½ min
	1999	n.a.	n.a.	n.a.	n.a.
	2001	n.a.	n.a.	n.a.	n.a.
	2005	91.20	2.22	20 min	6907 h 54 min
Philippines	1997	24.68 P	0.86	45 min	n.a.
	1999	48.32 P	1.24	33.5 min	10,347 h 41 min
	2001	42.52 P	0.86	28 min	14,110 h 28½ min
	2003!	42.24 P	0.76	31½ min	13,139 h 12½ min
Indonesia	1997	3500.00 R	0.76	25½ min	20,000 h 00 min
	1999	n.a.	n.a.	n.a.	n.a.
	2001	5275.34 R	0.51	42 min	25,590 h 46 min
	2005	10,994.62 R	1.12	20 min	24,557 h 24 min

Figure 9.11: Details of Labor in the Automotive Sector

Source: Wad (2009)

The changing wages exhibit a correlation with the diverse trends in the related automotive industry, indicating that industry development patterns influence wage adjustments (Figure 9.11). In reality, production trends are highly correlated with wage trends in the automotive sector. In summary, Thailand's automotive industry specializes in commercial vehicle production, expanding both production and international trade in the early 2000s, leading to an increased trade surplus in vehicle production. Meanwhile, trade deficits rose significantly in automotive components and parts.

The expansion of Thailand's automotive industry resulted in a growing trade surplus, significantly impacting Thai labor employment, business outcomes, investments, and public revenue. Malaysia's automotive industry faced an increasing trade deficit in both vehicles and automotive components.

Before the financial crisis in East Asia, the production volumes of Malaysia and Thailand were considered comparable. However, their subsequent actions diverged significantly after the crisis. Thailand's automotive industry succeeded in transitioning towards export-oriented growth. In contrast, Malaysia faced a standstill, coupled with reduced domestic market demand. This resulted in a much slower growth. Japanese-controlled car manufacturers played a major role in capturing a larger market share in Malaysia. The post-crisis differences had substantial implications for the labor market. Soon, the workforce in Thailand's automotive industry, at the very least, managed to recover and received higher wages than pre-crisis levels in 2005.

Both Malaysia and Thailand have implemented import substitution policies for the automotive industry since the late 1960s. However, their approaches diverged in the 1980s when Malaysia initiated the National Car Project, while Thailand emphasized collaborations with international cross-border companies in the early 1990s. The political dimension of the automotive market in ASEAN began with the inception of the ASEAN agreement in 1969, followed by the Brand of Brand Complementation (BBC) project in 1988 and the ASEAN Industrial Cooperation (AICO) in 1996 from 1998 to 2001. ASEAN operated under what is known as "developmental regionalism," designed for selective practices in certain industries.

Malaysia's commitment to the National Car Project aimed for a comprehensive and complete automotive industry, producing personal cars, vans, trucks, buses, motorcycles, and automotive components. The project found success in the protected domestic market, with Malaysia securing a 90% market share. However, the leading producer still failed to penetrate export markets, and its inability to compete internationally became a significant drawback during the Asian financial crisis.

In contrast, Thailand's government tried to establish the automotive industry but faced two critical challenges: the potential limited market and the criteria that reflected the actual capacity of the automotive industry, which should not be restricted solely to the domestic market proportion.

In the early 1980s, the Malaysian government decided to reduce car production sizes and collaborated with the weakest car producer in Japan, Mitsubishi Motors, for majority shareholding. The government protected the automotive industry and provided financial support, making it easy for Proton to dominate the market by the late 1980s. Proton then adjusted its structure to become a privately-supported company. When Mitsubishi Motor Corporation disagreed with Malaysia's design and development, including the country's marketing strategies, it withdrew from the partnership. Proton then acquired the business of Lotus, a UK-based sports car and luxury car design company. In the late 20th century, Proton introduced self-designed models and, within a few years, produced models with self-owned engine technology. Proton's management and the government led the automotive industry to operate successfully. Although questions and criticisms were raised about the investment in the project from the beginning, as there was neglect of investment in alternative projects or better investment opportunities, Proton and the government have successfully guided the automotive industry.

The governments of Malaysia and South Korea pursued different approaches in developing their automotive industries. Malaysia relied on a new breed of industrialists and labor from the Malay community, rather than leveraging

existing industrial capabilities, mainly from Chinese entrepreneurs. In contrast, South Korea depended on the Chaebol conglomerates, managed and led by experienced Korean entrepreneurs and executives with success in various industries. South Korea prioritized technological development and innovation on a large scale, whereas Malaysia did not elevate or develop an automotive innovation system. The Malaysian government lacked efficiency rankings or connections to competitiveness indicators similar to what South Korea employed.

A notable difference in Malaysia is the New Economic Policy (NEP), which aimed to create new business communities while addressing poverty. The National Car Policy was one mechanism within the NEP to implement its development objectives. In the NEP plan, new national-level companies and entrepreneurs were established, along with the mobilization of new indigenous labor. However, this led to a decrease in skills and automotive capabilities compared to the Chinese labor force and entrepreneurs.

South Korea, with its focus on technological development and large-scale innovation learning, outpaced Malaysia. Malaysia struggled to upgrade or develop an innovative automotive system. These factors contributed to the decline of skills and capabilities in the automotive sector, especially when compared to the Chinese labor force and entrepreneurs. If there is no creation of a strong knowledge and innovation system, both for general and specific automotive industries, beyond local and international projects, national-level car manufacturers will be driven to develop the automotive industry domestically, limiting their ability to sustainably compete internationally. Lessons from past failures, such as those experienced by Japanese and Korean car manufacturers in the 1960s and 1980s, should be taken into account.

In contrast to Malaysia, Thailand has taken a different approach by not emphasizing the development of the automotive industry led by national car companies. Instead, Thailand adopted trade protection policies. The country liberalized its automotive industry in the 1990s and implemented projects to support the development of Thai-owned suppliers. Initiatives included the establishment of a committee to promote investment for industry linkage development. However, by 1997, the liberalization and overall market-driven policies did not yield better results compared to Malaysia's "National Car Policy."

A significant outcome in Thailand was the specialization in pickup trucks, comprising over 60% of locally produced vehicles in the 1990s, driven by tax privileges. The economic crisis in Asia in 1997 further solidified Thailand's position as a leader in pickup truck exports. Before and after the crisis, the results demonstrated different potentials due to the divergent industrial strategies between Thailand and Malaysia.

During the early 2000s, under Prime Minister Thaksin Shinawatra, a new industrial plan was announced in 2001, aiming to transform Thailand into the "Detroit of Asia." Several projects were initiated to link industrial policies with international trade policies. New institutions, such as the Automotive Institute under the Ministry of Industry, were established, emphasizing increased communication between the private and public sectors. Thailand's automotive industry continued with state support and regulations, but the focus was less on detailed strategic planning. Primarily, development efforts received momentum from leading multinational companies (MNCs).

9.3 Roles of Agriculture, Natural Resources, and Service Sectors in Industrial Development

9.3.1 Roles of Agriculture and Natural Resources in Industrial Development

While one primary goal of overall development is to promote and expand the industrial sector in the economy, adjusting the proportions of the agricultural and resource-related production sectors is crucial. Industrial development necessitates the strengthening and strategic planning of the agricultural and resource-related sectors. Key considerations include:

(1) Enhancing Agricultural Efficiency

Elevating the efficiency of the agricultural sector is fundamental. Ensuring sufficient and capable agricultural production to meet domestic demands forms the basis for subsequent industrial and service sector development.

A clear example is the early development strategies of Japan and Taiwan, focusing on strengthening agriculture. Post-World War II land reforms aimed to provide farmers with land ownership, increase productivity, and generate income, forming the economic stability foundation.

(2) Addressing Low-Income and Medium-Income Countries

In countries with low or medium incomes, where governments lack substantial investment resources for infrastructure (e.g., public utilities, transportation, and telecommunications), developing agriculture and natural resources becomes a primary economic activity.

This initial development generates income for the government to invest in infrastructure, supporting the eventual expansion of industrial and service sectors. Taiwan employed a similar strategy in its early development phase.

(3) Exporting Agricultural and Natural Resource Products

In cases where government revenue is insufficient, especially in low or medium-income countries with limited foreign reserves, exporting agricultural and natural resource products becomes a starting point for income generation.

Export earnings can then support the importation of machinery to develop industries in the subsequent phases. Taiwan employed this strategy during its early development by focusing on agricultural and resource exports.

(4) Establishing Linkages

The agricultural and natural resource sectors play a crucial role in creating forward and backward linkages. Forward linkages involve supplying raw materials to industries and related service sectors, while backward linkages involve utilizing inputs from various production sectors.

Early planning to accommodate such linkages is vital for supporting production activities in agriculture and natural resources that are essential for overall industrial development. This includes activities such as steel production, oil refining, or petrochemicals, forming the upstream processes crucial for economic development.

(5) Generating Employment and Economic Ties

These sectors create backward linkages that utilize inputs from various production sectors, leading to job creation and economic interdependence.

Hence, early planning for a robust and interconnected agricultural and natural resource sector is crucial for facilitating the subsequent development of the industrial and service sectors. This includes activities such as the production of steel, oil refining, or petrochemicals, which form the foundation for economic development.

(6) Preventing Long-Term Issues

The content presented in Chapter 1 suggests that the development patterns of low and medium-income countries may lead to long-term problems. The focus on extractive institutions, emphasizing exploiting resources for self-benefit, might neglect the industrial development process necessary for long-term income elevation.

9.3.2 Roles of the Service Sector in Industrial Development

Industrial development is linked to the service sector. Although predominantly high-income countries (excluding Chile) use industrial development as a primary mechanism to elevate the nation and increase the average income of the population from low to middle income, eventually reaching high-income levels, the increase in the proportion and economic role of the service sector occurs after approaching or entering the high-income level (average annual income exceeding US\$12,536 according to World Bank criteria). From the experiences of developed countries, the development process typically begins with adjusting roles in the economic system, transitioning from agriculture to industry and then to services. This process occurs in both Western developed countries and developed Asian countries.

It can be argued that this pattern is a standard model for economic development and raising the average income of the population. Some perspectives may attempt to argue against the necessity of following such a pattern. However, based on empirical evidence from the economic systems of developed countries, there is no indication that any country has successfully skipped the industrial development phase, moving directly from dependence on agriculture and natural resources to utilizing the service sector to drive economic growth and elevate the population's income to high levels.

However, the service sector encompasses a broad and diverse range of economic activities, from fundamental services like food sales or transportation services to high-skilled activities such as financial services, software development, and information system advancements. When planning economic development, the alignment between the service sector and industrial development must be considered.

In summary, the service sector plays a vital role in the later stages of economic development, complementing the industrial sector. While discussions may arise questioning the necessity of adhering to a specific development model, empirical evidence suggests that successful economic development typically involves a progression from agriculture to industry and, subsequently, to services.

Key considerations in this development include:

1. In low-income stages, the service sector helps absorb labor from agriculture, creating jobs and income for these workers, mostly in informal sectors in urban areas (e.g., transportation services, retail, restaurants, and accommodations).

- Some countries can benefit from certain types of service branches to generate foreign currency income, such as tourism, contributing to the country's income similarly to exports.
- However, certain service branches, such as informal and tourism, cannot significantly raise the average income in the long term.
- 2. In middle-income stages, the industrial sector becomes a primary mechanism for production, export, job creation, and continuous improvement of labor efficiency, leading to a continuous increase in average population income.
 - Economic planning should consider the alignment between services and industrial development, such as developing transportation and logistics services and financial and insurance services.
- 3. In developed countries, the role of the industrial sector decreases due to high labor costs and the migration of low-skilled production to other countries.
 - Industrial production in the country is limited to high-skilled sectors, leading to increased income in agriculture (with fewer but more efficient workers) and the service sector.
 - Changes in patterns are observed, such as a continuous focus on high-skilled research and development (R&D) activities, resulting in the highest proportion of the population with education beyond high school in the OECD.

Summary

The presentation in Part 1 highlighted the differences between Thailand and Malaysia. Malaysia focused on building a national automotive company and adapted policies from Japan and South Korea. It emphasized import substitution industrialization as the main mechanism for industrial development. In contrast, Thailand aimed to create an automotive industry cluster, emphasizing exports and reducing import restrictions on components. Thailand succeeded in becoming a significant global production base, while Malaysia faced continuous losses in its national automotive companies, leading to business divestment.

Both Thailand and Malaysia faced the common challenge of lacking the capability to independently develop technology. While Malaysia relied on foreign technology, Thailand imported technology and had limited technology transfer to local entrepreneurs. This issue is crucial for future industrial policy considerations.

The importance of the agriculture and service sectors was emphasized. Despite the focus on industrial development to boost GDP and average income, the readiness and development of agriculture and natural resource sectors are vital. These sectors provide income and foreign currency, acting as initial capital for industrial development. Additionally, the development of the service sector, such as banking, insurance, and transportation/logistics, is essential for efficient industrial operations.

In conclusion, industrial development must go hand in hand with the development of the service sector. Policymakers need to prioritize this aspect. For countries in the early stages of development, tourism can be an economic activity generating foreign currency. However, the success of tourism depends on the appeal of tourist destinations and infrastructure, including transportation.

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