

Study on the Changes in China's Industrial Policies and Industrial Structures in Manufacturing Sector after China's Reform and Opening

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I. Introduction

As China's recent industrial advancement has changed the trade structure between Korea and China from a complementary relationship to a more competitive one, the need for research on Chinese industrial policy has increased.

Therefore, this study aims to analyze and evaluate changes in major industrial policies and industrial structures following China's reform and opening. We also analyze changes in the trade structure between Korea and China due to changes in China's industrial structure.

II. Changes in China's Industrial Policy

1. Market economy exploration stage (1978-1991)

In the first stage, the Chinese government first introduced industrial policies and focused on adjusting proportional relations such as imbalances between the agricultural and industrial sectors, and light and heavy industries. During this period, direct intergovernmental measures such as uniform quantitative control were mainly used, being the main means of a planned economy, but the effectiveness of industrial policy was limited. However, it is also a time when the government laid the foundation for China's policy to foster high-tech industries, such as the "Torch Program (火炬计划)" in 1988 and the designation of a "High Technology Industrial Development Zone (高新技术产业开发区)."

2. Initial construction stage of the market economy (1992-2001)

In the second stage, the Chinese government introduced a market economy system, imposed national industrial policies in the 1990s, and implemented policies to foster high-tech industries such as machinery, electronics, petrochemicals, and automobiles. The Chinese government began to support the introduction of overseas technologies and equipment by attempting industrial policies related to foreign investment policies, such as clarification of property rights and conversion of science and technology development through the modern corporate system.

3. Stage of full-scale and in-depth reform (2002-2012)

The third stage is a time when the government adopted new industrialization and industrial information convergence strategy for the development of high-tech and technology-intensive industries, announced the development of “Strategic Emerging Industries” after the financial crisis, and promoted innovation in new

industries. At the same time, restructuring policies were implemented for balanced development between industries, such as eliminating excess supply and underdeveloped production facilities, which were side effects of industrial policies in the past.

4. From 2013 to the present

At this stage the Chinese government is actively pursuing technology pursuit strategies through initiatives such as “Made in China 2025” and “Internet+” and “Artificial Intelligence+.” At this time, China is promoting the industry based on improved IT technology networks. It is also pushing for efforts to improve the efficiency of the market system by reforming the supply side, improving the market system through anti-trust laws, and implementing policies to establish a market competitive order. In response to U.S.-China trade disputes and the Covid-19 pandemic, the importance of industrial policy is expected to continue as the domestic market is integrated through the “Dual Circulation (双循环)” strategy and enhanced efficiency.

Table 1. China's Industrial Policy Stage and Core Policy

Stage	1	2	3	4
Policy Goal	- Mitigation of supply shortages - Industrial structure adjustment	- Market failure Adjustment - Prevention of duplicate investments	- Industrial structure upgrading - Establishment of modern industrial system(现代产业体系)	- Strengthen manufacturing competitiveness - Digital transformation of traditional sectors
Major industries	- Food, beverage, tobacco, construction materials	- Labor-intensive light industry	- Capital-intensive heavy industry	- Capital and technology-intensive high value-added industries
Policy measures	- Direct control by quantities, prices - Preferential distribution of supplies and resources - Fund allocation, foreign currency allocation	- Giving priority to government investment and financial support - Expansion of financial support such as tax incentives, etc.	- Less government direct intervention and guideline-type measures - Restructuring by market and technology	- Subsidy - Development Fund - Direct financing (Chasdaq, 創業板)

Source: Wonseok Choi *et al.* (2020).

III. Changes in China's industry and Korea-China trade structure

First, China's industry has transitioned from the light industries to a heavy industry-oriented structure. Beginning with China's entry into the WTO in 2002 and up to 2007, before the financial crisis, automobiles, knit textiles, products, and electronic components grew rapidly due to the expansion of exports. Since 2012, the telecommunications, train, and pharmaceutical industries have grown at a high rate as they have emerged as a production hub for the Chinese global telecommunications industry and domestic consumption has grown.

Second, the proportion of the high-tech industry has increased and the level of technology in the manufacturing industry has increased. The proportion of high-tech industries in manufacturing production in China rose from 6.2% in 1987 to 13.6% in 2017.

Third, localization and domestic industrialization are proceeding. The import and export rates of China's manufacturing industries fell from their respective peaks in 2002 and 2007. The export rate decreased from 14.5% (1997) to 13.1% (2017), while the import rate also fell from 13.2% (1997) to 9.5% (2017).

Table 2. Changes in indicators of China's industrial structure during each stage

(Unit: %)

Stage	Major Industries	Export Ratio	Import Ratio	R&D Intensity	Ratio of Heavy Industries to Light Industries
1	Daily miscellaneous goods, Refractory materials	-	-	-	109
2	Computers, Other transportation equipment	14.5	13.2	0.7	119
3	Automotive, Knit and Textile products	15.8	10.9	1.3	224
4	Communication equipment, Ceramic products	13.1	9.5	2.0	-

Source: Wonseok Choi *et al.* (2020).

Looking at changes in the trade structure between Korea and China, Korea's import and export dependence on China has increased. Korea's dependence on exports to China has risen from 3.5% in 1992 to 10% in 1997 and 20% in 2005, and its economy continues to depend on China for more than 25% of exports since 2013.

Korea's export sector to China has gradually advanced from labor-intensive to technology-intensive industries. As major export industries were upgraded according to China's industrial structure upgrade policy, Korea's export industries to China moved from steel, synthetic resin, chemical fiber to electronic components, basic chemical materials, synthetic materials, and semiconductors in the 1990s.

Based on this information, we perform linear regression with a two-way error component, using data on the manufacturing sectors in Korea and China from 1997 to 2017. Our results show that Korea's exports to China increased by 0.36 percent when China's exports to world rose by 1 percent. In addition, Korea's exports to China showed an upward trend in 2007, 2012, and 2017, against 1997 data, but this trend reversed between 2012 and 2017, indicating that the synchronization of Korean and Chinese exports fell between 2012 and 2017.

IV. Implications

Based on these analyses, we propose the following policy implications for Korea. Under the U.S.-China trade friction, China is expected to focus on a powerful science and technology strategy, promotion of the digital economy, "New Infrastructure" construction, and the China Standard 2035 strategy. Therefore, Korea needs to diversify its export market in the information and communication technology sector, prepare Korea's industrial technology protection system, and expand its participation in China's domestic market while diversifying global supply chains.

In addition, China's global influence in the field is expanding as the Chinese government strengthens support in new growth industries such as 5G, AI and establishes an industrial ecosystem. Therefore, our analysis is that it will be more important to expand the supply capacity of materials, parts, and equipment in

Korea's new growth industries. Consequently, a response strategy is needed considering China's import growth rate in these areas and to improve Korea's trade competitiveness.

Finally, China's industrial policy is expected to evolve from simple incubation measures to a comprehensive strategy brought into harmony with the market, and further research on the creation of Chinese industrial ecosystems through policy and interaction between companies is expected. **KIEP**

References

Choi, Wonseok, Pyeongseob Yang, Jinhee Pak, Joohye Kim, Jiwon Choi, and Xinwang Zhao. 2020. "A Study on the Changes in China's Industrial Policies and Industrial Structures in Manufacturing Sector after China's Reform and Opening." KIEP Policy Analyses 20-23 (in Korean).