The Trade-Investment-Services Nexus and Korean Trade Policy

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The purpose of this research is to analyze the roles of the expansion of the global value chain and supply-chain trade in Korea's exports growth in the 2000s and recent slowdown and to draw implications for trade policies aimed at export promotion. To this end, the study analyzed how trade-investment networks, which are the basis of supply-chain trade, have been differentiated according to industry and region and have changed over time from three different perspectives, that is, macro-economic, industrial, and business perspectives.

□ Overseas expansion of major exporting industries and development of supply-chain trade

Supply-chain trade has made a significant impact on global trade from the late 1980s, when it took off in earnest on the back of the global expansion of multinational companies, to the late 2000s, when it began to stagnate. During the same period, both

trade and direct overseas investments simultaneously surged on the global level, posting a four-fold and a ten-fold increase in 2015, respectively, compared to 1990. The global value chain and supply-chain trade made a significant contribution to the expansion of global trade during the period.

However, global direct overseas investments entered a plateau state or a downward trend in the mid-2000s, and global trade volumes also showed signs of stagnating or contracting around 2010. Many recent studies concluded that a slowdown in global trade is mostly due to structural factors, with the maturing and stagnation of the supply-chain trade playing a significant role. Studies made compelling cases that conditions that enabled the dramatic expansion of global trade until the mid-2000s were transient, or their trade expansion effects have waned. Recent developments raise expectations that even if global trade expands in the future, it is unlikely that the pace of expansion reaches the level seen prior to the mid-2000s. In other words, the period between the late 1980s and mid-2000s, when global trade expanded at double the pace of the global economic growth rate, is an historical exception.

The expansion of global supply-chain trade coincides with the surge in Korea's export and import and overseas investments. Compared to 1990, Korea's exports and direct overseas investments increased in 2015 by more than 8 times and 25 times, respectively, surpassing the global average growth rates. However, Korea's direct overseas investments passed the peak in 2013, and exports have declined from 2014. Korea's overseas investments and exports continue to decline until recently.

This study analyzed the sales and sourcing structure of overseas

Korean subsidiaries to demonstrate the role of supply-chain trade in Korea's exports. The export inducement effects of home sourcing by overseas Korean subsidiaries surged to US$251 billion or approximately 46% of total exports in 2012 and gradually declined thereafter. These changes suggest that the export growth mechanism driven by overseas investments and supply-chain trade has not worked effectively since the late-2000s.

This study analyzed the concentration of investments and exports by region and industry to determine the role of supply-chain trade in Korea's export growth. Notably, the study analyzed changes in the concentration of investments and exports in factory-type economies such as China and Southeast Asia. The analysis confirmed that investments in factory-type economies such as China, Southeast Asia, and Eastern Europe played a key role in the shift of overseas investments from the growth to contraction stages. If supply-chain trade was conducive to export expansion during an export boom, it indicates that it did so by way of an increase in overseas investments in factory-type economies and related export growth. However, the share of factory-type economies in Korea's overseas investments began to fall in 2010 in both absolute and relative terms, suggesting a major shift in the expansion of the global value chain.

According to the analysis of the concentration of overseas investments by industry and sector, it is noteworthy that the share of the manufacturing sector in Korea's overseas investments has plunged and remained low since the mid-2000s. In addition, more than 70% of the manufacturing industry's overseas investments were concentrated on eight major sectors, including automobiles,

electronic components, machineries, and electric equipment. These eight sectors are mostly assembly businesses with well-developed supply-chain trade. Given this, the industry distribution of Korea's overseas investment was favorable to achieve export growth through supply-chain trade.

The manufacturing sector has yet to recover direct overseas investments and exports, which made a downturn in 2013. Hence, whether the recent slowdown or negative growth in Korea's exports is due to cyclical or structural changes has a bearing on future export growth strategies for the Korean government and industries.

Furthermore, the slowdown or decline in exports is significant in that it is not limited to Korea but takes place around the world. Supply-chain trade, the key contributor to the dramatic growth of global trade in the 1990s and the 2000s, appears to have entered a maturing stage. The diagnosis indicates that global trade will inevitably be slow going forward.

□ Analysis of trade-investment networks by industry and region

The study introduced a typology method to classify the operating mechanism of trade-investment networks by region and industry. The sales and sourcing patterns of overseas Korean subsidiaries were incorporated into the typology to make more detailed classification than the vertical, horizontal, and export platform classifications. An analysis was conducted on differences by region and industry and on changes in the correlation between overseas investments and exports/imports. The sales and sourcing structure

of overseas Korean subsidiaries introduced by this study is a critical link between investment and trade and a key variable that defines the nature of trade-investment networks.

To analyze the extent to which the expansion of overseas supply networks by Korean companies contributes to export growth, the study looked into correlations between Korea's exports and the share of home sourcing by overseas Korean subsidiaries, the number of new subsidiaries, and direct overseas investments. The analysis found that the global financial crisis marked a turning point in the correlation between exports and the share of home sourcing. That is, the correlation between the two was zero during the pre-crisis period, and turned positive during the post-crisis period. The correlation between the number of new subsidiaries and exports changed around 2009. As opposed to the case with home sourcing, the correlation between the number of new subsidiaries and exports was positive only during the pre-crisis period.

The findings indicate that the operating mechanism of supply-chain trade underwent a significant change with the outbreak of the global financial crisis. The driver behind Korea's export growth shifted from a quantitative increase in overseas expansion until 2009 to changes in the sourcing structure of existing overseas subsidiaries during the post-crisis period.

The study analyzed how the sourcing structure of overseas Korean subsidiaries has changed by region and industry. The analysis found the key factor was the localization of sales and sourcing structures from 2010 and onwards. In other words, the effects of export expansion driven by supply-chain trade have waned in the post-2009 period due to the localization of the sourcing structure.

Supply-chain trade plays a greater role in factory-type economies than in headquarter-type economies. In particular, the sales and sourcing structure of Korean subsidiaries in the US, China, and Southeast Asia were analyzed to demonstrate the difference in the impact of the sourcing structure on exports. The analysis found that the share of home sourcing was lower in China and Southeast Asia than in the US. Notably, Korean subsidiaries operating in Southeast Asia show a relatively high share of third-country sourcing. That is, third countries such as China account for an increasing share of the sourcing mix. As a result, supply-chain trade in Southeast Asia is unlikely to drive Korea's export growth as effectively as was in the case of China.

The analysis of changes in the share of home sourcing by region and period suggests a possible decline in export expansion effects generated by supply-chain trade. A comparison of the pre-2009 and post-2009 periods shows that the share of home sourcing has declined for overseas Korean subsidiaries operating in factory-type economies such as China and Southeast Asia.

All in all, the analyses found that Korean industries, experienced a significant structural change in trade-investment network and supply-chain trade with the 2008 global financial crisis. In particular, the shrinking share of home sourcing by overseas Korean subsidiaries operating in factory-type economies testifies to an increase in the localization or regionalization of sourcing activities, and the weakening of the positive impact of supply-chain trade on export growth.

□ Internationalization patterns and implications

To analyze internationalization patterns of businesses and the impact of internationalization on business activities in Korea, the study used a survey of textile, apparel, and electronics companies, which have led the expansion of the global value chain.

The analysis of industry-specific investment and export data shows two interesting points. Both textile/apparel and electronics industries have seen a fall in overseas investments on an absolute basis as well as rapid deterioration of net export (total exports less total imports) effects generated by overseas subsidiaries.

According to the survey results, the textile industry shows a higher degree of internationalization than the electronics industry in terms of overseas sales or exports. Recent export trends show that those who reported export contraction outnumbered those who reported export growth in the textile industry, and the opposite was true in the electronics industry.

Intermediate goods and services that electronics companies purchase for domestic production paint a conflicting picture. While service outsourcing is limited, the outsourcing of intermediate goods is almost universal. Those who outsource intermediate goods from overseas account for nearly 50% of those surveyed. By region and type, the purchase of intermediate goods is characterized by a high share of customized sourcing from advanced economies such as Japan, the US, and the Eurozone. The pattern suggests that companies turn to advanced economies to source intermediate goods that are difficult to procure domestically due to lack of technologies.

In contrast, textile companies source intermediate goods mostly from emerging economies such as Southeast Asia and China. Companies which outsource intermediate goods from overseas account for more than 40% of those surveyed. That is, textile companies import intermediate goods primarily to save costs. In regard to internationalization of production, the share of companies engaging in global production is higher in the textile industry than in the electronics industry. As is the case with exports and overseas sales, the textile industry reports a higher degree of internationalization of production than the electronics industry.

For both electronics and textile companies, the key destinations for investments are China and Southeast Asia, and production activities are focused on finished goods to be sold locally or to third countries. However, the analysis of the sales structure of overseas Korean subsidiaries shows that electronics companies are part of a complicated network encompassing Korea, overseas subsidiaries, and third countries, and have achieved a high level of localization with overseas subsidiaries generating 70% of their revenue from outside Korea. Electronics companies see a high level of localization both in sales as well as sourcing mixes.

For both the textile and electronics industries, the key objective of overseas production is to produce finished goods. The difference is that electronics companies put a greater emphasis on semi-finished goods and R&D. Textile companies manufacture finished goods in overseas countries and sell them to third countries, while electronics companies have a complicated value chain that encompasses finished goods, intermediate goods and R&D.

In-depth interviews with textile companies show an interesting

difference between large and small to medium-size companies. Recently, large companies have expanded on the back of overseas sales growth and created jobs, whereas small companies have adopted a factory-less business model by offshoring their production bases and focusing on service activities such as service design. Small companies show serious signs of crisis in terms of employment and growth.

Production internationalization has changed the domestic production structure to varying degrees between the two industries. The share of companies producing finished goods is high in the electronics industry, whereas the share of companies engaging in the higher end of the value chain is high in the textile industry. That is, internationalization has long progressed in the textile/apparel industry, resulting in the concentration of domestic functions in the upstream. The analysis of the value creation structure at each stage of the value chain shows that both industries rely on domestic production for service functions such as R&D and design. The difference is the extent to which the two industries rely on manufacturing outsourcing. Textile companies rely more on outsourcing than electronics companies do.

□ Direction for industry and commerce for export growth

Supply-chain trade contributed to Korea's export growth until the mid-2000s by way of trade-investment nexus. However, that is no longer the case from 2010. If the recent developments are due to changes in the global economy as well as the domestic structure, export growth calls for a new direction. The direction requires

changes across industries, companies, markets, and exporting methods such as the development of new export growth drivers, the widening of exporting businesses, the expansion of markets targeting rising middle classes in emerging economies, and use of new distribution methods such as home shopping with the arrival of the digital revolution. Transforming domestic demand-driven consumer goods and services into export-driven industries should be the way to go to develop new export growth drivers. Just as the expansion of supply-chain trade coincided with production internationalization, the future development of export-driven industries should be aligned with the internationalization of consumption.

Widening the base for exporters requires the expansion of exporting companies. Notably, it is essential to foster small- and medium-sized companies through exports by reshaping the corporate ecosystem that is currently split between large and small companies.

Lastly, the role of service in export growth should be seen in a new light. Notably, it should be noted that a significant share of services is exported indirectly as an integral part of manufactured goods. Enhancing the role of service is compatible with the transformation of domestic demand-driven consumer goods and services to export growth drivers and the expansion of exporting companies. Simultaneous changes on multiple fronts should be pursued to complement the weakening growth momentum in the existing main export industries.