

## **Analysis of Vulnerabilities in Korea's Import Supply Chain**

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As pandemic-induced global supply chain disruptions are prolonged around the world, concerns exist about the negative effects of an overseas supply shock on the Korean economy. Given that the Korean economy is manufacturing-oriented and heavily dependent on the import of major raw materials and intermediate goods due to a lack of natural resources, a supply chain shock is likely to lead to domestic production and export disruptions. Such circumstances warrant an in-depth look into the vulnerabilities of Korea's import supply chain, but relevant research is not yet sufficient. In this regard, this paper assesses the vulnerabilities of Korea's import supply chain through an analysis of the global trade network, and draws policy implications from the results.

The results of the analysis show that vulnerabilities in the global supply chain are mainly attributable to the large presence of central players, such as China, the U.S. and Germany, and to the tendency to cluster via cross-border value chains. In particular, as the dependency of global trade on China rises, supply chain disruptions in China could have larger spillovers into the overall global trade network. Major intermediate and capital goods, such as electronics, petrochemical goods and base metal goods, showed greater vulnerability, as they have a higher tendency to cluster due to their greater participation in the global value chain (GVC), and as some central players have a large presence in those industries.

An assessment of Korea's import supply chain vulnerabilities shows that the vulnerability of commodity items significantly surpassed global levels of vulnerability, while that of capital goods was found to be relatively lower, indicating that Korea has export competitiveness in global markets for major capital goods, including semiconductors and batteries. However, it was found that Korea was more vulnerable in terms of some capital goods like semiconductor equipment, imports of which are in high demand, but which are exported from only a limited number of countries with the needed technological prowess. In addition, as the dependency on China of some key vulnerable items surpasses the general global level of dependency, a deterioration in the Chinese supply chain could severely compromise Korea's supply chain stability.

In response to these results, the following policy implications can be suggested. To deal with increasingly persistent supply chain shocks, such as the war in Ukraine and Chinese lockdown measures, policy efforts should be made to diversify the import source of, or localize production of, major raw materials and capital goods. Short-term efforts to this end could include making timely responses through inventory stockpiling and strengthening real-time monitoring. In the medium- and long-term, policy authorities should work on localizing key technologies and on securing overseas supplies for critical raw materials. Participating actively in multilateral trade agreements pursued recently by major countries would also be helpful in securing a stable import supply chain.

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