

Impact of Global Value Chain Restructuring on Korean Exports

Bo-Young Choi* Donghyun Park**

Global value chains (GVCs) continuously expanded from the 1990s to the early 2000s. However, there have been mounting concerns that GVCs could be loosened and restructured in the aftermath of the economic recession stemming from the 2008-2009 global financial crisis, the U.S.-China trade dispute, and the COVID-19 pandemic. Since Korea's economic growth so far has been based on exports, by being closely interconnected with GVCs across East Asia, this value chain restructuring seems to be having a profound impact on our exports and economy as a whole. This article looks into changes in GVCs, using various indicators, such as forward and backward GVC participation rate, GVC production length, the GVC position index, and the export diversification index, conducts an empirical analysis of the effects of these changes on Korean exports, and then draws implications from the results.

The results show that growth in GVCs stagnated in the 2010s and that the chains tended to have become shorter, especially in the late 2010s, due to negative shocks including some geopolitical risks and the COVID-19 pandemic. Among the various shocks, geopolitical risks, such as the rise in protectionism and nationalism, have reduced the length of GVCs and have also diversified GVCs. The COVID-19 pandemic also contributed to shortening these GVCs, but the extent of its contribution was relatively smaller than that of geopolitical risks. This can be interpreted as meaning that corporations view policy uncertainties caused by geopolitical risks as being more persistent than shocks such as the COVID-19 pandemic.

Comparisons of the effects of GVC linkages on Korean exports from sector to sector show that the high tech manufacturing sector contributed more to export growth than low tech manufacturing, and contributions from the service sector to export growth were greater than those of the manufacturing sector. However, by period (former half and latter half of the 2010s), the positive effects of GVC linkages on export growth in the second half of the 2010s were weaker than in the first half. This was attributable to the intensification of geopolitical risks due to the U.S.-China trade dispute that took place in the second half of that period, and to factory shutdowns and logistics disruptions arising from the spread of COVID-19. Meanwhile, our exports were impacted negatively by the COVID-19 pandemic, especially through the effects of backward linkages rather than forward linkages. This can be understood that our exports were affected greatly by worldwide lockdown measures, as Korea heavily relies on overseas input factors for exports.

We can draw the following implications from the above results. First, in order to reduce the transmission effects of adverse shocks through GVCs, it is necessary to enhance substitutability through supply chain diversification. Moreover, as it is more effective for high value added industries, such as the high tech manufacturing industry and the business services industry, to participate in GVCs in order to boost exports, it is required to seek ways to invigorate these industries' participation. Last, countries led by the U.S. are trying to exclude China and Russia, which are non-market economies, from GVCs and restructure GVCs to center on allies. As this move is expected to greatly change GVCs going forward, there is a need to establish active measures to tackle this.

** Assistant Professor, School of Economics and Trade, Kyungpook National University (Tel: +053-950-5413, e-mail: bchoi2@knu.ac.uk)

* Economist, Model Forecasting and Policy Analysis Team, Office of Economic Modeling and Policy Analysis, Bank of Korea (Tel: +82-2-759-4137, e-mail: donghyun.park@bok.or.kr)

■ We thank Deputy Governor Woong Kim, Deputy Director General Seung Yong Lee, Director Hong Jig Lee, Head Minsik Kim, Head Dongweon Lee, and Head Kyoungheon Park for their useful comments.

■ The contents of this paper represent the personal opinions of the authors and do not necessarily reflect the official views of the Bank of Korea. Any report/citation of this paper should specify the names of the authors.

I. Background

II. Changes in GVCs

III. Effects of Changes in GVCs on Exports

IV. Effects of COVID-19 on Exports Through GVCs

V. Overall Assessment & Implications