

# Effects of Global Value Chains on Productivity of Individual Industries

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This paper conducts an empirical analysis of various aspects of the relationship between global value chains (GVCs) and productivity, by industry. To this end, the degrees of participation in GVCs are quantified with the use of Inter-Country Input-Output Tables and productivity data by industry. The paper also deduces upstreamness in GVCs, which displays the length of a value chain, indicating the number of stages of production, and also shows where within the stage an industry is located.

According to the results of the analysis, industries with higher levels of GVC participation show higher labor productivity or total factor productivity. The more fragmented a value chain is, the greater such improvement in labor productivity led by GVC participation is estimated to be.

Meanwhile, the results of the analysis of Korean industries show that productivity shocks by industries located up the value chain have significant impacts on the added value of downstream industries. Productivity shocks by downstream industries, on the contrary, are not estimated to have significant impacts on upstream industries. The analysis also shows that shocks from upstream industries in Korea have greater impacts on Korean industries than shocks from upstream industries overseas.

This study implies that it is necessary for individual industries to enhance their GVC participation to achieve greater productivity. Particularly, it is important to encourage upstream industries occupying the first part of the production stages to participate in GVCs, so as to increase externalities from the spread of

productivity.

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