

Determinants of Value Added in Exports and Their Implications

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As global production networks proliferate, assembly processes tend to create less value added than other activities along value chains such as design, research and development (R&D), distribution, and after-sale services. In addition, domestic value added in gross exports turn out to be smaller than foreign value added in gross exports. As a result, which tasks along global value chains a company decides to participate in has become more important than how much a company exports. In other words, companies pay more attention to value added than gross exports.

This study decomposes the value added in gross exports into its components, including domestic value added and foreign value added. In contrast to previous studies including Stehrer (2013), Koopman *et al.* (2014), Choi and Hahn (2012), Choi

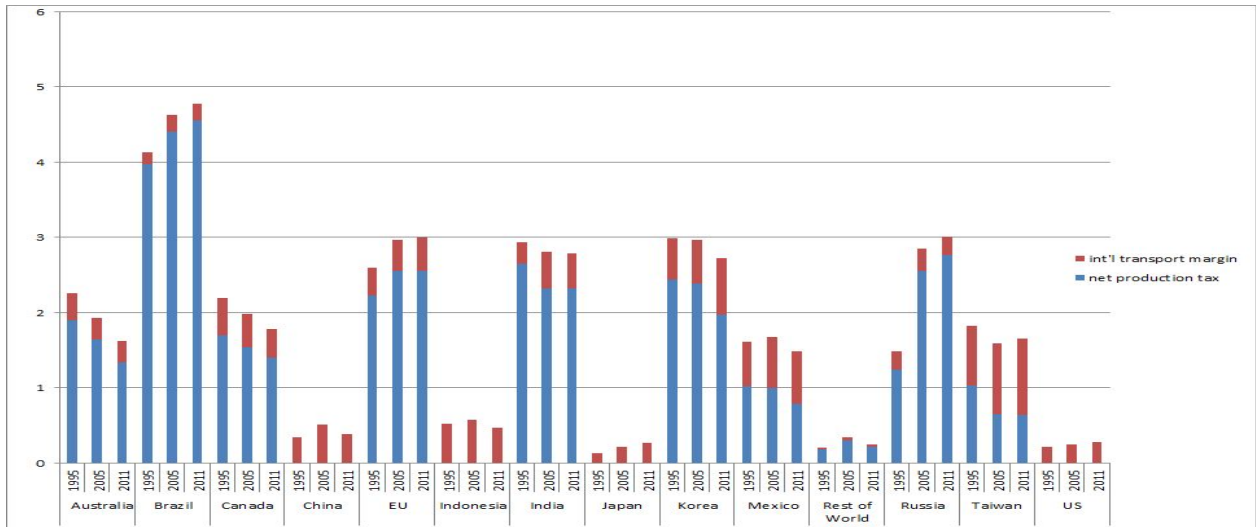
and Kim (2013), Chung (2014), Yoon (2015), we exclude transaction costs such as net taxes on products for this study, which accounted for about 3 percent of total gross world exports from 1995 to 2011 on average (refer to Figure 1).

Figure 2 indicates that the share of Korean domestic value added in exports to exports in gross value decreased from 69.9 percent in 1995 to 55.4 percent in 2011, comparable to the shrinkage in the world average from 83.5 percent to 78.3 percent during the same period. Domestic value added in exports returned to Korea increased from 0.5 percent to 0.6 percent, while domestic value added reexported to third countries rose from 12.7 percent to 13.8 percent during the same period. On the contrary, foreign value added in exports increased substantially from 22.7 percent to 37.8 percent.

This result reveals that Korean exports of parts and raw material have been utilized in a relatively small degree, while foreign compo-

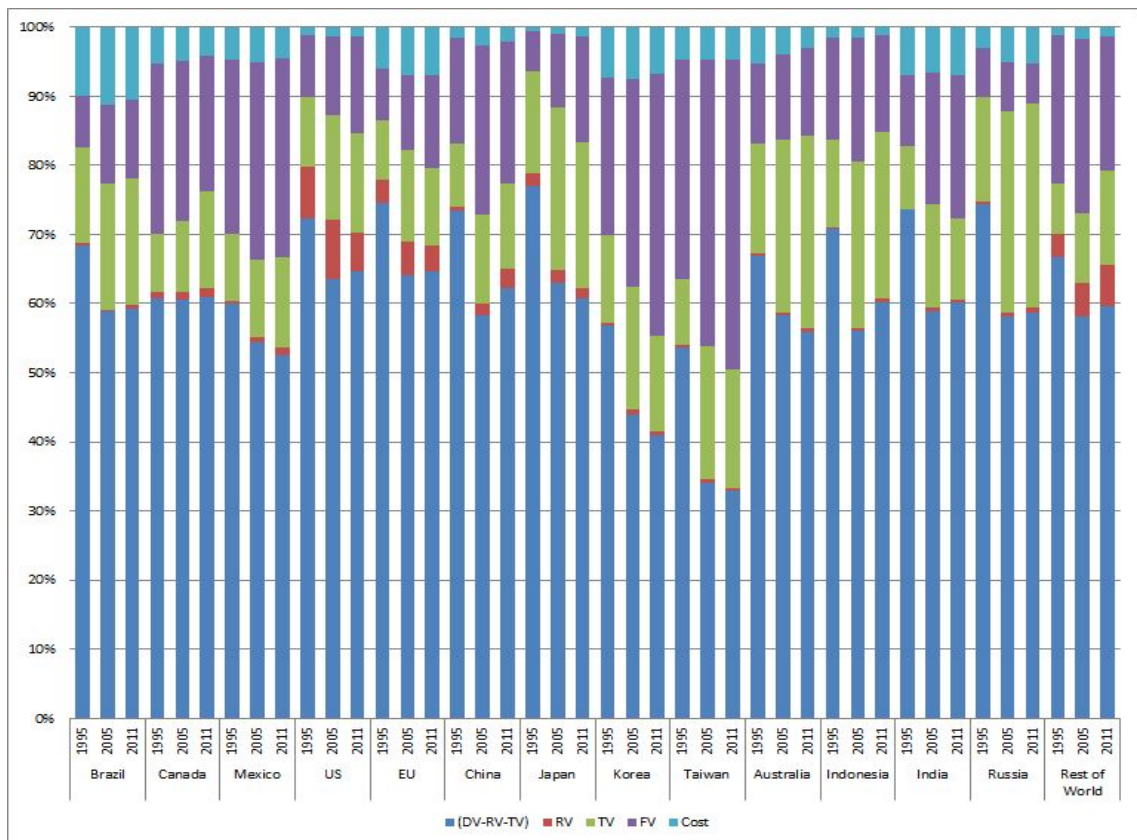
nents imported to Korea have been utilized for Korean exports in a relatively large degree.

Figure 1. Transaction Costs Accruing from International Trade (%)



Source: Author's calculation using World Input-Output Database.

Figure 2. Decomposition of Value Added in Exports (%)



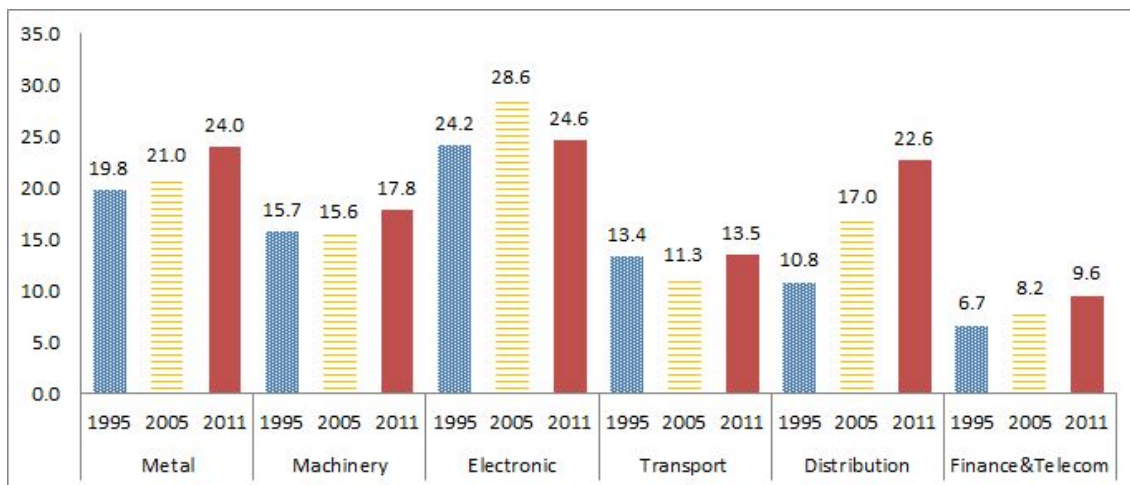
Source: Author's calculation using World Input-Output Database.

Note: DV (domestic value added), RV (domestic value added that returns via intermediate imports), TV (domestic value added reexported to third countries), FV (Foreign Value Added).

The decomposition of value added in exports shows that a network of value added along global value chains centers around the United States, China, and the European Union. When we investigate the comparative advantage of Korean industries from 1995 to 2011, they turn out to have utilized the benefits of global value chains.

Specifically, electronics, transport equipment, machinery, metal, distribution and transportation services, and telecommunication and transportation services have made the best of global production networks by efficiently outsourcing intermediate goods (refer to Figure 3).

Figure 3. Korean Import Share of Intermediate Goods by Industry (%)



Source: Author's calculation using World Input-Output Database.

This study also investigates the determinants of value added in exports by estimating the expanded multi-sector gravity model, with panel data covering 13 countries and 18 sectors for 17 years from 1995 to 2011.

Empirical evidence shows that trade costs such as tax and transportation costs reduce value added in exports, implying that trade facilitation measures and tax policy lowering trade costs are vital for the promotion of value added in exports. We also find that material and service offshoring have a significant positive effect on value added in exports, supporting the notion that efficient offshoring of material and services inputs raises productivity and competitiveness in manufacturing as well as services industries.

In addition, we find that regional trade agreements have significant value added trade creation effects. However, the magnitude of these effects is smaller than those of RTAs on gross exports. This is because the reduction in trade costs prompts firms to split the stages of their production processes across member countries of RTAs. Thus, goods and services move across countries multiple times while the amount of value added contained in gross exports does not increase as significantly.

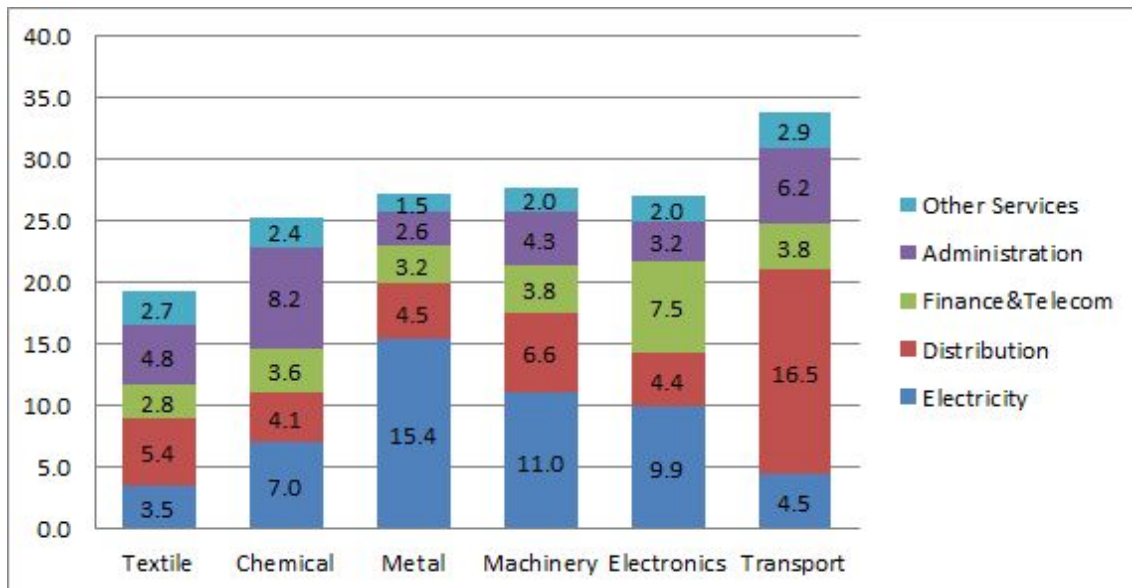
Furthermore, we find that a higher share of imported intermediates encourages participation in GVCs. Finally, we explore the determinants of industrial competitiveness measured by the trade specialization index, and find that the reduction of transaction costs is crucial for enhanced competitiveness. Also, ser-

vice offshoring strengthens competitiveness in intermediates.

The results from this study provide the following implications for Korean policy. First, Korea needs to initiate industrial restructuring in order to tackle the issue of the fall of domestic value added in exports since the early 2000s. Second, it needs to set up strategies to upgrade its position along global value chains, considering that the networks of value chains depend on country and industry. Third, it

needs to implement trade facilitation measures in order to reduce transaction costs, of which results for Korea turn out to be higher than the world average. Fourth, the role of the services sector is very important in upgrading the comparative advantage of manufacturing sectors (refer to Figure 4). Finally, the improvement of domestic regulations are urgently called for to facilitate the free movement of production factors and to efficiently utilize global value chains. **KIEP**

Figure 4. Contribution of Service Sectors to Value Added in Korean Manufacturing Exports (2011, %)



Source: Author's calculation using World Input-Output Database.

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