

Gaps in imported intermediate ratio between exporting and non-exporting firms in Japan

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In the context of improving Trade in Value Added (TiVA) indicators, the OECD and relevant countries work on the extension of their supply-use or input-output Tables. Such work is based on the assumption that imported intermediate ratios should be different between exporting and non-exporting firms or between foreign-controlled and domestically-controlled firms. By incorporating such firm heterogeneity in supply-use or input-output tables and using the results in OECD's international input-output table, TiVA indicators are to be more precise and relevant. Since this work uses the approach of existing Trade by Enterprise Characteristics (TEC) Statistics, it is termed TEC plus. This paper tries to prove such an assumption in terms of firm heterogeneity by measuring imported intermediate ratios of exporting and non-exporting firms, as well as domestically and foreign controlled-firms in Japan.

After compiling TEC data for Japan and examining relevance of such data, this paper tackles TEC plus. Specifically, by using firm-level data of the Basic Survey of Japan's Enterprises, it identifies gaps in the use of imported intermediate goods between exporting (engaging in direct exports) and non-exporting firms (not engaging direct exports at all) and/or foreign and domestically-controlled firms in Japan. The estimate reveals that the imported intermediate ratio to output is almost 10 percent higher in exporting firms than in non-exporting firms, and that the gap has expanded in recent years. In terms of the type of ownership, imported intermediate ratio is more than 15 percent higher in foreign-controlled firms, whose majority of ordinary shares or voting power is held by non-residents, than in domestically controlled firms. These results suggest that OECD's assumption holds in Japanese economy.

Then the paper examines the direction of further studies. As far as firms in Japanese economy is concerned, the gap between foreign-controlled and domestically-controlled firms is larger than the gap between exporting and non-exporting firms. However, the magnitude of foreign-controlled firms is limited because the share of their imports and exports is still low. Thus, the priority should be given to the distinction between exporting and non-exporting firms for Japan.

The paper further analyses gaps in imported intermediate ratios of manufacturing industries by measuring gaps by product types using firm-level data of Census and Input Survey of Manufacturers. Interestingly, a clear distinction is found in firm heterogeneity between processing and assembly industries such as electronics and automobiles and primary material industries such as chemicals and textiles.

In processing and assembly industries, largest gaps are found in products that are produced by a focused industry, typically electronic products in electronics industry and transport machinery products in transport machinery industry, and such gaps can be incorporated into Japan's Import table without further thought. In contrast, in primary material industries, negative gaps were found in products that are produced by a focused industry, typically chemical products in chemistry industry and textile products in textile industry.

Through more detailed data analysis, the paper reveals that negative gaps in primary material industries are due to their division of production process. For example, in chemical industry, there are several large firms that import materials and produce export goods with integrated production systems. At the same time, many medium-size firms co-exist and they rather engage in a certain part of production system, importing materials and provide intermediates only to local firms. Such

findings cast a question about the understanding of firm heterogeneity in terms of intermediate imports and its treatment in the supply-use or input-output table.