

The usefulness of Japan's extended input-output tables incorporating firm heterogeneity

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This study examines the usefulness of an extended input-output table (EIOT) incorporating the heterogeneity of Japanese firms based on differences in ratios of imported intermediate goods to total output. Using an EIOT, the vertical specialization indicator of Japan was calculated, which corresponds to the foreign value added included in exports. In this process, differences in intermediate input ratios were measured examining different types of firms using firm-level microdata from the Basic Survey of Japanese Business Structure and Activities. The results indicate that distinguishing between exporting and non-exporting firms is relevant for assembly industries such as electronics and automobiles, as widely discussed in the literature. In contrast, for primary materials industries, such as paper, chemical, and metal industries, other distinctions appear to be more relevant. For example, for the chemical industry, firms tend to have large, integrated manufacturing plants, and thus the differences in intermediate import ratios are largest when distinguishing large firms from small and medium firms. For paper and metal industries, firms tend to rely on foreign raw materials, and thus the difference is largest when distinguishing between firms with and without foreign affiliates. By incorporating such heterogeneity, the vertical specialization indicator increases by 70%; thus, the EIOT captures the foreign value added more comprehensively.