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Does Multinational Affiliation Make For Technological Differences? An Investigation For Belgium With Extended Input-Output Tables

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In national accounts (NA), supply-and-use tables (SUT) and input-output tables (IOT), firms are traditionally grouped into industries according to the type of goods and services they produce. Within these industries defined in terms of product similarity, technological homogeneity has been taken for granted. However, value chains have become increasingly fragmented and global in recent years, and within-industry patterns of specialisation have developed, which do not depend on the types of products delivered by firms but are related to other firm characteristics such as size, ownership or exporter status. This has been largely documented in empirical research on firm heterogeneity (e.g. Bernard, Jensen and Schott, 2009). The aim of so-called extended supply-and-use and input-output tables is to take such heterogeneity into account by developing tables in which industries are disaggregated according to at least one of these firm characteristics.

We are currently working on a disaggregation by ownership of industries in Belgian SUT and IOT for the year 2015. This work is done in the framework of a Eurostat grant for the development of extended SUT for Belgium. In this paper, we present the statistical methodology and the data used for this disaggregation as well as first analytical results derived from the disaggregated tables. This is of particular interest for an economy like Belgium, which is small, very open and has a sizeable presence of firms that are either foreign affiliates or own affiliates abroad.

For the disaggregation of industries by ownership, we divide firms into three categories: a) domestic firms (dom), i.e. firms that are part of a purely domestic group or that are completely independent; b) firms that are part of a multinational group with a domestic grouphead (mne); and c) firms that are part of a multinational group with a foreign grouphead (fa). Hence, we need to identify group structures with direct and indirect relationships in order to classify firms into

these three categories. For this purpose, we rely on data on ownership status from a group structure survey that serves for defining samples for the compilation of foreign direct investment (FDI) and foreign affiliate statistics (FATS). We complement this with information provided by firms in their annual accounts on their (domestic and foreign) affiliates. This allows us to obtain a better coverage of group structures.

Based on this classification of firms, we disaggregate industries by ownership status in the 2015 Belgian SUT, using all individual firm-level data sources that serve for the construction of the country's conventional SUT. We will then derive an extended IOT from these extended SUT. This work will follow relatively closely the methodology that we have developed previously for disaggregating tables by exporter status (Michel et al., 2018). Moreover, we also aim to specifically disaggregate industry-level value-added components (compensation of employees, operating surplus) as well as employment into the three categories of firms.

From an analytical perspective, we want to find out whether firms with a different ownership status are (on average) different in technological terms (based on parameters such as their cost structures, import propensity, labour productivity…). We also want to determine the contributions of the three categories of firms to GDP, employment and exports. The aim of the disaggregation of value-added components is to derive a distribution of income by ownership status. Finally, we also plan to analyse the roles played by the three categories of firms in Belgium's participation in global value chains.