Input-output analysis using large-scale payments data

Vasco Carvalho, Kerstin Hötte, François Lafond, Johannes Luma, Victor Meirinhos

Input-output tables published by national statistical offices rely on data collected through consumer and business surveys, which is costly, often highly aggregated at the regional and sectoral level, and comes only unfrequently and with a considerable publication delay.
The increased availability of large-scale real-time and granular economic data bears the potential to transform and/or supplement current approaches to data collection, but many biases and caveats that need to be understood before these data sets can be fully leveraged. In this talk, we present the results of an initial assessment of using large-scale payments data for the construction of National Accounts in the UK.

Recently, the UK Office for National Statistics (ONS) secured access to financial transactions data from the BACS payment system infrastructure, which is used by almost every business in the UK. We start with a prototype anonymised and aggregate dataset comprising >500m Business-to-Business payments worth >£7.5tn and covering 118k unique accounts corresponding to a considerable share of UK businesses in 2015-2022. The data comprises monthly transactions volumes and values between 85 SIC 2-digit industries at the regional level (12 NUTS-1 regions plus 2 islands). While fairly coarse, our data is available in (almost) real-time. Transactions are assigned to individual region-industry pairs, providing a much better time and cross-sectional resolution than existing Input-Output tables, which are mostly released at the national level with a time lag of 4 years.

We assess the feasibility of developing statistics consistent with national accounting standards but based on population-scale naturally occurring data in real time. In the presentation, we will show the results of a systematic comparison of payments-based IO tables with the official survey-based National Accounts, and we will provide roadmap to tackle key challenges when mapping granular account-level transaction data to the industry and macroeconomic level. We show exploratory applications to nowcasting and discuss a research agenda for the use of this dataset in downstream case studies, such as the impact of Brexit and Covid-19.