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PRESS RELEASE

Micro-based evidence of EU competitiveness: The CompNet database
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The economic literature has long recognized that firm-level data delivers crucial information for understanding the drivers of competitiveness, as aggregate performance depends strongly on firm-level decisions and shocks might have a different macroeconomic impact depending on the underlying distribution of firms. For these reasons, one of the pillars of the Competitiveness Research Network of the EU System of Central Banks (CompNet) from the beginning has been the micro or firm-level based analysis of sector and country competitiveness. However, cross-country firm-level analysis is hindered in practice at least by two reasons. First, existing cross-country indicators based on firm-level data are often not comparable given that they refer to different periods, methodologies or use different variable definitions. Second, firm-level data is normally confidential. As a result, micro-based analysis of competitiveness remain mostly bounded at the national level, limiting therefore the scope for benchmarking analysis, that is, for looking for best practices in peer countries, and for better understanding the role of the regulatory framework and institutions on micro and macro developments.

One way to tackle the confidentiality and comparability issues associated to firm-level analysis is to start from firm-level data and generate customized indicators of firm dynamics at the industry level. This approach is known as "distributed micro-data analysis" and it has been followed by CompNet to set a new research infrastructure able to deliver cross-country firm-based indicators. The research infrastructure involves the ECB as well as 13 NCB, one National Statistical Institute (ISTAT) and the EFIGE team, resulting in a current coverage of 11 EU countries which together represent about two-thirds of European Union's GDP: Belgium, Czech Republic, Germany, Estonia, France, Hungary, Italy, Poland, Spain, Slovakia and Slovenia. With the input of all parties, a harmonized protocol or set of commands was put together to construct firm-level indicators on competitiveness-related variables such as productivity or unit labor costs. Special care was taken to ensure that the protocol harmonized cross-country data-management on a number of crucial areas, including the industry classification, use of deflators, outlier treatment and variable definition and computation.

The output of the exercise is a database featuring for the 11 EU countries 58 NACE Rev.2 industries over the period 1995-2011 with comparable information on productivity performance and dynamics of underlying heterogeneous firms. The advantage of CompNet's research infrastructure with respect to existing information included in aggregate statistics is that it enables to keep much of the richness of firm-level data in terms of full distribution of variables or joint correlations computed at the firm-level. This very rich set of indicators will set the stage for devising better informed policy decisions.

Some of the preliminary findings emerging from this new database are as follows:

- There is large heterogeneity in terms of firm performance within narrowly defined sectors, even more than across sectors.
- Within sectors, firm performance cannot be proxied by a normal probability distribution. Instead the distribution is highly skewed, with a large number of poorly performing firms and few "champions". The fact that firm performance distribution is not symmetric implies that the "average" firm is not representative of the underlying distribution of firms.
- Firms at different ends of the performance distribution, that is, bottom and top performing firms within a given sector, behave very differently in terms of size, productivity dynamics or unit labor cost dynamics. More concretely, we find that more productive firms are systematically larger than low productive firms (top performing firms can be up to 10 times larger as the firm in the median of the productivity distribution in the same sector). Additionally, top productive firms, within a given sector, feature a more dynamic productivity evolution and, above all, contain to a larger extent labor costs.
- Firm performance dispersion within a sector can lead to higher sector productivity because it enables the reallocation of production inputs (resources) from low to high productive firms. The higher the covariance between productivity and size, at the firm level, the more efficient is resource allocation.
- The extent to which an efficient allocation of resources across firms operating within the same sector contributes to aggregate productivity varies widely across countries and sectors. We find, however, that in all countries the distribution of resources, labor in this case, is worse in non-tradable sectors than in the tradable one.
- The importance of considering the dispersion rather than merely the average of the productivity distribution is confirmed when we use our dataset to explain sector export performance across Europe. In sectors where the labor productivity distribution is more highly skewed (fatter and longer right tail), it appears more likely to observe higher volume of exports. This would support the claim that the performance of the top percentiles drives aggregate trade outcomes, independently of the average productivity level.

Overall, this paper is intended as a solid documentation of the newly constructed CompNet firm-level indicators database. It also uncovers some interesting regularities across countries as well as country-specific developments which sets the stage for future research and policy-oriented work.