Leaving a trade area can substantially reduce innovation and productivity

The advantage of being in a trade area like the European Union is that a company can sell its products and services to a larger pool of customers. These are the usual *gains from trade*: each company/country specializes in what it does best, and by doing so, increases consumer welfare. By selling to a larger pool of customers, companies also gain scale and become larger.

The larger scale of production provides the necessary incentives for companies to incur the large sunk costs of innovation, in particular, the high performing companies. The existence of large set-up costs of innovation is one of the reasons why most innovative activity is conducted by large firms. Without having access to large markets, over which such large sunk costs can be diluted, innovation is less likely to occur, with damaging effects to innovation and productivity.

This effect is particularly strong for fragmented industries such as the moulds industry, in which companies tend to operate at a very small scale. This is the main finding of my recent article where I have studied the effect of EU integration on the Portuguese moulds industry.

The research results are an indication that leaving a trading area can reduce overall innovation, besides an expected reduction in production and investment.

What happens to innovation and productivity when a country decides to leave a trading area? My estimates suggest that a 25 per cent increase in trade costs is expected to reduce innovation by half and productivity by 4 per cent for an export-oriented industry composed of small companies, as in the Portuguese moulds industry.

So, why does innovation fall so much?

The reason for the decline is the combination of a fall in market access together with a very competitive environment. Since innovation is subject to large ‘sunk costs’, the absence of an easy to access export market over which companies can expand, reduces the incentives to spend money on innovations. This reduction is larger for companies in more competitive industries, since high performing companies in more competitive markets can more easily exploit their competitive advantages, and conquer market share.

What is the importance of high performing companies?

Date originally posted: 2017-09-22

Permalink: http://blogs.lse.ac.uk/businessreview/2017/09/22/leaving-a-trade-area-can-substantially-reduce-innovation-and-productivity/

Blog homepage: http://blogs.lse.ac.uk/businessreview/

High performing companies sell more, employ more workers and are more productive. These companies are the ones to lose more in the case of an exit from a trade area, because they will lose their competitive advantage. Since these companies account disproportionately for a country's productivity, employment and investment, an exit will thus further translate as less production, employment and investment.

In the study, I develop a theoretical framework in which companies compete with each other over time to sell its products to final customers. One important element is that, in order to innovate, companies must pay an upfront sunk cost. I then use this theoretical dynamic model and directly estimate it using detailed data from the Portuguese moulds industry. The main parameter of the model is the size of the sunk costs of research and development (R&D). For the Portuguese moulds industry this is estimated to be about three million euros on average. This compares with the sales of an average firm of about 1.5 million euros per year. Doing innovation is thus a considerable effort from the companies' side.

The advantage of estimating a theoretical model is that we can now perform counterfactual exercises in situations not captured in our data, such as an increase in trade costs due to an exit from the EU. The estimates suggest that increasing trade costs by 25 per cent is expected to lead to a fall of 50 per cent in total production, a decrease of 13 per cent in the number of firms and, most importantly, a 50 per cent reduction in innovation and a 4 per cent fall in productivity. The 25 per cent increase in trade costs is in line with the estimated reduction in trade costs between 'periphery' and 'core' EU countries after EU integration (Beltramo, 2010).

The counterfactual estimates are consistent with the performance of the Portuguese moulds industry between 1994 and 2004. During that period, the industry benefited tremendously from access to European car manufactures. Production increased by 240 per cent while exports increased by 140 per cent.

An exit from the EU, as was debated in Portugal during the 2011 sovereign debt crisis, would likely reverse these gains.

Notes:

- *This blog post is based on the author's paper Sunk Costs of R&D, Trade and Productivity: The Moulds Industry Case, The Economic Journal, August 2017*
- *The post gives the views of its author, not the position of LSE Business Review or the London School of Economics.*
- *Featured image credit: Welding, by Free-Photos, under a CC0 licence*
- *When you leave a comment, you're agreeing to our Comment Policy.*

Carlos Daniel Santos is Assistant Professor of Marketing at Nova School of Business and Economics. His research interests are on the effects of demand on companies' strategic decisions, dynamic games, structural econometrics, international trade and innovation.

Date originally posted: 2017-09-22

Permalink: http://blogs.lse.ac.uk/businessreview/2017/09/22/leaving-a-trade-area-can-substantially-reduce-innovation-and-productivity/

Blog homepage: http://blogs.lse.ac.uk/businessreview/