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Increased investment abroad boosts domestic investment

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True to the maxim that a euro can only ever be spent once, it is often thought that foreign direct investment by German firms means that those firms reduce their investment in Germany. A new study examines this hypothesis, exploring the relationship between domestic and foreign investment.

Since the global financial and economic crisis, investment in Germany by domestic firms has remained subdued, despite the fact that interest rates are currently very low. It is a completely different story abroad, where German firms have been investing heavily, especially since 2005. Is the high level of investment activity abroad detrimental to investment at home?

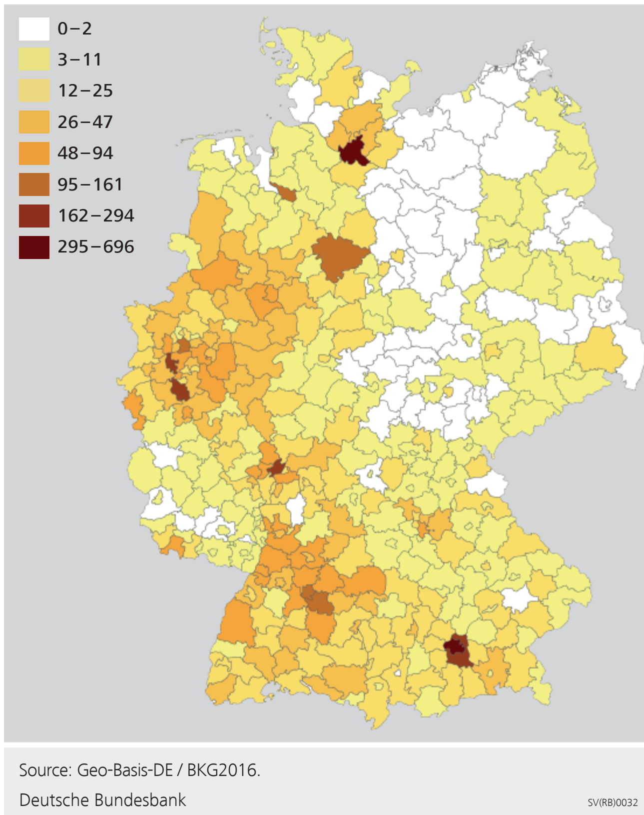
For instance, this could be the case – under certain conditions – whenever firms shift production abroad to locations with lower unit labour costs. Alternatively, increasing foreign direct investment could lead to a rise in domestic investment if the productivity gains deriving from offshoring – for example due to the specialisation on technology-intensive tasks - prevail. There is currently no academic consensus as to whether foreign direct investment crowds out domestic investment or, in fact, complements it. Desai, Foley and Hines (2009), for example, find a positive relationship between foreign and domestic investment for US firms. Owing to data limitations, however, they are unable to identify the determinants of this relationship.

In a new study, we examine the same question using Bundesbank firm-level data for Germany for the period 1999 to 2013. Using these micro data enables us to isolate the effect of foreign direct investment by splitting firms with the same attributes into two groups, the sole difference being whether they have set up a new foreign affiliate or not.

Which factors determine when firms invest abroad?

First, we investigate firm-specific and geographical factors which explain when German firms establish affiliates abroad. Our results indicate that both the size and capital intensity (that is to say capital input per employee) of the parent company matter. The amount of prior foreign direct investment is also a significant factor in the establishment of (additional) new foreign affiliates. Figure 1 also shows that the parent's location in Germany is important: significantly more parent companies based in the Munich, Frankfurt, Cologne, Düsseldorf and Hamburg regions establish new foreign affiliates than those domiciled elsewhere.

Geographic distribution of German firms establishing new foreign affiliates



Source: Geo-Basis-DE / BKG2016.
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Second, we apply the estimation technique known as matching. Building on the results of the first step, using this method we pair each firm that has a new foreign affiliate with a counterpart that has similar firm-specific and geographic attributes but does not have a new foreign affiliate. Numerous tests show that this method ensures a high level of comparability between both groups. For these matched pairs we then compare domestic investment as well as other variables such as, for example, the firms' productivity.

Foreign investment boosts domestic investment

The results show a positive relationship between foreign direct investment and domestic investment in Germany at the firm level over the 1999 to 2013 period: on average, the establishment of a new foreign affiliate by a domestic parent company is associated with significantly higher domestic gross investment amounting to €450,000. Firms with a new foreign affiliate invest, on average, €12.9 million per year in Germany. The effect is therefore quantitatively important. How pronounced the effect is also depends on the amount of foreign direct investment. A 1% increase in foreign fixed assets leads to a 0.13% rise in domestic investment.

What is the reason behind this positive effect? Our study contains an in-depth investigation of three possible factors, derived from various models: productivity gains, tax savings and better access to financial capital abroad.

Firms invest abroad for a variety of reasons. One possible motive is to offshore some production stages to other countries where they can be completed more efficiently and cheaply. This is also known as vertical foreign direct investment. In theory, offshoring leads to an increase in the parent company's productivity (Grossman and Rossi-Hansberg, 2008). If this were the key factor behind the positive domestic investment effect that we have found, we would expect our data to show foreign direct investment leading to improved productivity and domestic investment benefiting to a greater extent from vertical foreign direct investment. However, our results show that productivity-driven offshoring of production cannot account for the positive relationship between foreign and domestic investment.

Potential tax savings offer a second plausible explanation. Savings may be made if there is a difference between how firms are taxed in the location of the domestic parent company and in the location of the foreign affiliate. Our results support this theory, showing variation in accordance with the tax rate: the lower the foreign tax rate relative to the domestic tax rate, the more heavily firms invest at home.

How can this counterintuitive result be explained? Foreign affiliates in countries with a lower tax rate than at home can reduce the effective capital costs of the parent company, thus freeing up additional resources that can be used for domestic investment (Overesch, 2009). Consistent with this, domestic parent companies that invest abroad by establishing a new foreign affiliate pay less tax. The higher the parent's liabilities to the foreign affiliate, for example through intra-group lending, the more the parent will save on tax. The tax deductibility of borrowing costs is an important factor in that regard.

In addition to tax savings, financing opportunities in the destination country may also play a role. Additional estimates suggest that the positive relationship is more pronounced if the stock market capitalisation in the destination country (i.e. the total value of the stock market relative to gross domestic product) is higher. In addition, the domestic parent company's internal liabilities grow faster, the higher the ratio of lending to gross domestic product and stock market capitalisation

are in the destination country. This would appear to indicate that improved access to financial capital provides a partial explanation of the positive relationship between foreign direct investment and domestic investment.

Conclusion:

Our results suggest a positive relationship between domestic and foreign direct investment by German firms. That positive effect can be accounted for in part by tax-related factors and better funding terms in the destination country. Productivity gains, however, do not appear to matter.

Disclaimer:

The views expressed here do not necessarily reflect the opinion of the Deutsche Bundesbank or the Eurosystem.

References

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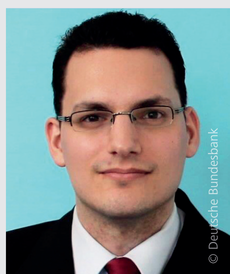

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News from the Research Centre

"Labor supply factors and economic fluctuations" by Claudia Foroni (Bundesbank), Antoine Lepetit (Banque de France) and Francesco Furlanetto (Norges Bank) will be published in the *International Economic Review.*

"Convertible bonds and bank risk-taking" by Natalya Martynova (Bundesbank) und Enrico Perotti (Amsterdam) will be published in the *Journal of Financial Intermediation.*

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