

The impact of FDI on import structure

The increasing integration of the EU since the completion of the single market in 1993 and the greater involvement of the central and east European economies in the international division of labour are also reflected in the structure of German production and in German foreign trade. One example is that some old EU member states have seen a fall in their share of German imports, while there has been a sharp rise in German imports from the new EU member states in central and eastern Europe.

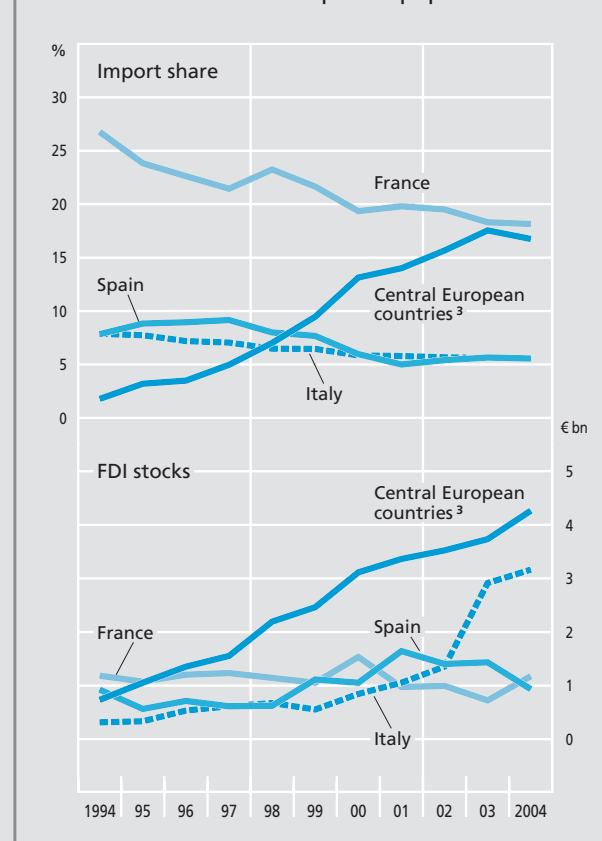
This raises the question of whether the regional shift in German imports is solely the result of direct competition between foreign sellers in the global market or whether it can also be partially attributed to German companies' strategic decisions. Indeed, it emerges that the shifts observed in the structure of German imports are partly due to German FDI.

In the following study, the manufacture of transport equipment will serve as an example. The second half of the 1990s, in particular, saw the import shares of three of Germany's most important EU trading partners (France, Italy and Spain) and those of the central European EU member states – the Czech Republic, Hungary, Poland, Slovakia and Slovenia – move in opposite directions in this sector. Whereas the old EU member states witnessed a fall in their share of German imports, the share of German imports attributable to the new EU member states jumped particularly dynamically, from 2% in 1994 to just under 16% in 2005 (at 2000 prices).

At the same time, the manufacture of transport equipment is by far the most important industrial sector for German FDI in the central European EU member states. German FDI stocks in those countries, at over €4 billion (at 2000 prices) in 2004, were nearly twice as high as

the amount of FDI in the chemicals industry, the second most important industrial sector for German investors. Moreover, German enterprises' foreign investment in the central and east European economies in the transport equipment manufacturing sector has been rising continuously in the past few years, whereas in France, Italy and Spain such activities have largely stagnated.¹⁾

Percentages of German imports and German FDI stocks in the manufacture of transport equipment²



1 However, there was a spike in Italy in 2003 caused by a significant one-off transaction. — 2 At 2000 prices. The charts are based on the 1994-2004 period because figures for FDI stocks for 2005 are not yet available. However, the empirical study includes the year 2005 since the previous year's FDI stocks are used for the estimation. — 3 Czech Republic, Hungary, Poland, Slovakia and Slovenia. — 4 The data are from the Bundesbank's Microdatabase Direct Investment (MiDi) and the Federal Statistical Office's Foreign Trade Statistics. The variables in the equation are integrated of order 1. A panel cointegration test

according to Im, Pesaran and Shin, taking into account the corrected t-values according to MacKinnon and the aggregated probabilities using the procedure devised by Demetrescu, Hassler and Tarcolea, confirmed the existence of a cointegrating relationship at the 10% level. — 5 A complementary relationship between German FDI and imports from the host country has already been established in earlier studies. See Task Force of the Monetary Policy Committee of the European System of Central Banks, Competitiveness and the Export Performance of the Euro Area, ECB Occasional Paper Series, No 30/2005, and S Herrmann

The econometric analysis covers the manufacture of transport equipment and is based on the 1994-2005 period, and the country panel is based on bilateral data between Germany and the five central European economies (Czech Republic, Hungary, Poland, Slovakia and Slovenia), on the one hand, and the three old EU member states (France, Italy and Spain), on the other. The estimation is based on the following equation:

$$im_eu_{t,j} = \alpha_0 + \alpha_1 im_wt_t + \alpha_2 fdi_eu_{t-1,j} + \alpha_3 fdi_ce_{t-1,i}$$

where *im_eu* denotes German imports from France, Italy or Spain in the respective year; *im_wt* denotes total German imports in the respective year; *fdi_ce* denotes German FDI stocks at the end of the year in the respective central European country; *fdi_eu* denotes German FDI stocks at the end of the year in France, Italy or Spain; *i* is the index for central European countries; *j* is the index for France, Italy and Spain; and *t* is the time index. The data are the logarithms of real variables at 2000 prices.⁴

The estimates presented here show a direct relationship between the subdued momentum of German imports of transport equipment from France, Italy and Spain and the relative inactivity of German investors in these economies.⁵ What this indicates is that, as a consequence of the lower amount of activity of German enterprises, fewer semifinished or finished products are exported from those countries to Germany.

Moreover, the increase in the FDI of German manufacturers of transport equipment in central Europe impacts adversely on Germany's imports from the old EU member states. As expected, this indirect relationship is not as strong as the direct relationship between FDI and imports. However, the assumption that outsourc-

and A Jochem (2005), Trade Balances of the Central and East European EU Member States and the Role of Foreign Direct Investment, Deutsche Bundesbank Discussion Paper Series 1, No 41/2005. The low value of the elasticity can be explained by the fact that a relationship has been established between stocks (of FDI) and flows (of imports). The long-run impact of FDI on foreign trade, however, results from the cumulative value throughout the lifetime of the foreign activity. — ⁶ Whereas FDI-induced imports from central Europe are thus implicitly integrated into the estimation, total imports from the five central European coun-

Impact of German FDI on German imports of transport equipment from France, Italy and Spain

| Determinants | Panel estimation |
|-----------------|-------------------|
| <i>im_wt</i> | 0.574 (10.83) |
| <i>fdi_eu_1</i> | 0.069 (3.02) |
| <i>fdi_ce_1</i> | -0.025 (-2.08) |

ing elements of the production process also influences external economic relationships to third countries is also confirmed. This implies a direct competitive relationship between FDI-induced imports from the five central European countries and imports from the old EU member states.⁶

Finally, what the studies also clearly show is that, in the manufacture of transport equipment – irrespective of the impact of German FDI – German imports from the three old EU countries are growing more slowly than imports from the rest of the world. In other words, France, Italy and Spain are losing import shares in Germany: the elasticity of imports from these countries relative to all imports in this sector, at 0.6, is clearly smaller than 1. This indicates that there are other factors behind those countries' relatively weak export performance.

This is consistent with the observation that nearly all industrial countries have lost ground in world trade in the past 20 years to new competitors in Asia and Europe. The explicit inclusion of price competitiveness based on nominal unit wage costs⁷ yielded no significant results. One likely reason is that price competitiveness also impacts on the host country's attractiveness for FDI and correlates strongly with the relevant variables.

tries turn out not to be statistically significant in the econometric study. This is probably attributable to the high multi-collinearity between outward FDI to central Europe and imports from central Europe. The lack of significance, however, could also be because imports not caused directly by outward FDI are not mutually competitive. — ⁷ In the production sector.