

FOREIGN DIRECT INVESTMENT AND THE CZECH CORPORATE SECTOR: POTENTIAL RISKS TO FINANCIAL STABILITY

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This article discusses the potential risks to price stability stemming from the influence of foreign direct investment on the economy. The analysis uses corporate data from a unique Deutsche Bundesbank database containing an almost complete sample of German enterprises that invested in the Czech Republic between 1996 and 2004. Attention was given to two issues: the role of intra-group financing in foreign-owned corporations, including its potential effect on financial intermediation in the economy as a whole, and the life cycle of an investment as an indicator of possible investment outflows in the future.

1. INTRODUCTION

The inflow of foreign direct investment (FDI) into the Czech Republic has been high in recent years. On average, it reached around 6.5% of GDP in 1995–2006. Although part of the inflow has been due to the privatisation of state-owned enterprises, especially in the 1990s, a relatively large proportion of this investment has come in the form of acquisitions of private corporations or green-field investments, particularly in recent years.

This article discusses two FDI-related phenomena that may directly or indirectly affect financial stability, namely the sources of finance in companies founded by FDI, and the life cycle of an investment. The analysis uses corporate data on individual German direct investments in non-financial corporations in the Czech Republic between 1996 and 2004 from the MiDi database, administered by Deutsche Bundesbank for the purposes of calculating Germany's financial account of the balance of payments and its international investment position.

The focus on risks associated with FDI inflows is not very common in the contemporary literature. So far, the theoretical and empirical research has mainly discussed and quantified the positive effects of FDI on the performance of the domestic economy, including indirect effects on domestic companies, especially in the framework of supplier-customer relations ("spillovers"). The available evidence suggests strong direct positive effects on investment activity, employment, export performance and output growth (Jones and Wren, 2006). The existence of indirect effects of FDI in the new EU Member States, including the Czech Republic, is suggested by a number of studies as well as by the available anecdotal evidence (Javorcik, 2004; Torlak, 2004; Geršl et al., 2007).

However, foreign direct investment can also introduce certain risks into the economy. The strengthened export orientation due to FDI increases the dependence of the domestic economy on the external environment and possibly also on global developments in those sectors where the investors operate, which may lead to higher volatility in the economy's performance (Bergin et al., 2006). In addition to other macroeconomic risks such as the current account deficit due to transfers of profit from foreign-owned corporations and the related effect on the exchange rate, FDI can affect financial stability in an indirect way, particularly in two areas.

First, the tendency of foreign companies to obtain funding for their operations within their group rather than from local banks may reduce the demand of large foreign-owned companies for loans on the local market. This slows the development of the domestic financial sector. Banks can respond to this by shifting to riskier small and medium-sized domestic enterprises, which often act as foreign companies' suppliers. This may increase credit risk within the loan portfolios of local banks.¹⁴¹

Second, a strong dependence of the economy on the performance of foreign companies founded as part of the relocation of production to lower-cost countries raises concerns regarding the effect of a potential outflow of these investments into countries with even lower wage and other costs. The available evidence suggests that a foreign investment can go through a life cycle, at the final stage of which the optimum solution for the investor may be to liquidate or relocate the investment. This could adversely affect the domestic economy's performance and hence also the financial sector. The potential negative effects of FDI outflows can also be aggravated by existing links to domestic suppliers, who can lose an important customer as a result of the relocation. In that case

¹⁴¹ Local banks mean domestic banks, which of course can be largely owned by foreign institutions, as is the case, for example, in the Czech Republic. We are also interested in the effect on domestic banks in this case, not only because of their role in financial intermediation in the domestic economy, but also from the viewpoint of supervision of the domestic banking sector.

the number of bankruptcies of domestic enterprises might grow and problems in banks' loan portfolios might arise, multiplied by the increased focus of banks on small and medium-sized enterprises.

The article is structured as follows: section 2 describes the characteristics of German foreign direct investment. Section 3 discusses the role of intra-group financing of foreign-owned companies and summarises the most important findings of the empirical analysis. Section 4 analyses the life cycle of a foreign direct investment. Section 5 concludes by summarising the results.

2. FOREIGN DIRECT INVESTMENT FROM GERMANY: EVIDENCE FROM CORPORATE DATA

Germany is one of the biggest investors in the Czech Republic. At the end of 2005 the share of Germany in the stock of FDI was around 20% (making it the second largest investor behind the Netherlands with 29%), although a number of German corporations had invested in the Czech Republic indirectly via third parties registered, for example, in the Netherlands. In this article we focus only on non-financial corporations (i.e. excluding investment in banks, insurance companies and other financial intermediaries, where German enterprises are also active). The share of Germany in the stock of FDI in the non-financial sector was roughly 24% at the end of 2005, again behind the Netherlands (with around 32%).¹⁴²

The Deutsche Bundesbank's MiDi database covers all FDI of German companies in the Czech Republic according to a standard definition (a share in the company's capital of 10% or more), including indirect holdings.¹⁴³ However, only foreign direct investments in companies with total assets exceeding CZK 3 billion are recorded.¹⁴⁴ The MiDi database is a unique database containing corporate information on the performance, assets and liabilities of the subsidiaries of German corporations abroad, including information on the financial relations between companies linked by participating interests.¹⁴⁵ Although using only a sub-sample of FDI (with a German investor) reduces the information content of the results of the analysis for the whole sector of foreign companies operating in the Czech Republic, the relevance of Germany in the FDI stock allows us to some extent to apply the results to the economy in general.

As at the end of 2004 the MiDi database included 718 Czech non-financial corporations with a German direct investor, around 50% of which were active in manufacturing, 25% in trade and roughly 20% in transport, communications and services.¹⁴⁶ Table 1 shows the relevance of companies with a direct investor from Germany compared to the aggregate data for the Czech corporate sector.¹⁴⁷ Companies with a German investor accounted for around 25% of assets in the Czech non-financial sector at the end of 2004, their shares in total turnover and employment being roughly 20% and less than 15% respectively. The relevance of German investment differs depending on industry; German enterprises have particularly high shares in manufacturing, electricity, gas and water supply, trade and some services. The sectoral breakdown of foreign investment can to a certain extent determine how high the potential risk of an investment outflow can be. The risk of outflow is smaller in industries where the investor's entry was motivated by efforts to gain market share (services, energy, trade) than in those where the main motivation was to benefit from the low wage costs in the Czech Republic (manufacturing).

¹⁴² Data for 2006 were not available at the time this article was prepared.

¹⁴³ See Lipponer (2006) for a description of the Deutsche Bundesbank MiDi (Microdatabase Direct Investment) database. The MiDi database has the advantage that it also includes companies indirectly owned by a German company, e.g. through holding companies or other entities founded, for example, for tax reasons in third countries such as the Netherlands. For indirect FDI holdings to be recorded, the German owner must have a majority participating interest in the intermediary company. If the investment is held through two intermediaries, it will be recorded in the database only if the first (majority-owned) intermediary owns 100% of the second intermediary. The database also contains data on foreign direct investment in Germany.

¹⁴⁴ This threshold has applied since 2001 but was changed frequently prior to that year. For example, between 1999 and 2001 all investments had to be reported wherever the total assets of the foreign company exceeded DM 1 million (for majority-owned companies) or DM 10 million (for investments representing more than 10% but less than 50% of capital). For this reason it is not possible simply to observe the evolution of aggregate data over time.

¹⁴⁵ Individual data are protected and must not be published. Researchers and experts working with this database in Deutsche Bundesbank may – with the prior consent of Deutsche Bundesbank – publish only aggregate data and analyse results in a manner preventing the calculation of individual data.

¹⁴⁶ 2004 is the last year for which data are available; data for 2005 will be available in the MiDi database in the second half of 2007.

¹⁴⁷ The data for the Czech corporate sector are published by the CZSO and only include companies with 100 employees or more. Thus, Table 1 slightly overestimates the relevance of German companies. For example, this is visible in the services sector, where many smaller enterprises are likely to operate. On the other hand, the reporting threshold for MiDi (total assets exceeding EUR 3 million) corrects this distortion somewhat, as large companies are likely to be recorded in the MiDi database as well.

Table 1 – Relevance of companies with a German foreign direct investor in the Czech corporate sector
(corporations from MiDi in % of corporations with 100 employees or more from CZSO)

	Assets	Turnover	Employment
Mining and quarrying	4.5	3.3	2.2
Manufacturing	24.4	24.5	18.4
Electricity, gas and water supply	29.1	24.9	22.0
Construction	6.6	6.6	5.5
Trade and repair	29.6	28.9	24.8
Transport and communications	7.9	5.2	4.0
Services*	92.6	32.0	4.8
Non-financial corporations sector, total	23.4	21.9	13.8

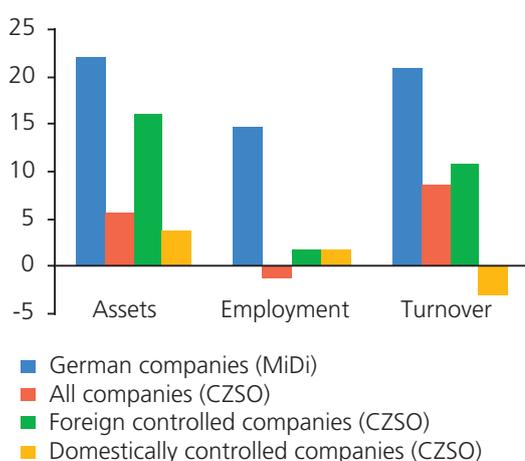
Source: CZSO, Deutsche Bundesbank

* The high share of German companies in assets in the services sector is due to the inclusion of only large corporations (100 employees or more) from the CZSO database, whereas a large number of smaller companies are probably active in this sector.

Chart 1 shows the average increase in the indicators of companies with a German investor between 2000 and 2004 by comparison with developments in Czech companies with 100 employees or more in the following categories: all companies, foreign-owned companies and domestic companies (including public enterprises). The averages of size and performance for German-owned companies generally increased after 2000 at a higher rate than those for other company categories. This may have been due to organic growth and an improving financial and economic situation of the existing enterprises with a German investor, but also to the exit of inferior companies and the entry of new, larger and better performing companies. In part this trend can also be explained by the privatisation of some large Czech companies to German corporations (e.g. Transgas) during this period.¹⁴⁸ Chart 2 shows that companies with a German owner raised their profitability to a similar extent as larger companies in the Czech Republic in general, but still lag behind the average profitability of foreign-owned companies. The growth of companies with a German investor and the improvement in their profitability indicate that these enterprises are still in the growth phase of their life cycle and therefore their liquidation can be assessed as not very likely (see also section 4 of this article).

Chart 1 – Annual growth in company performance indicators 2000–2004

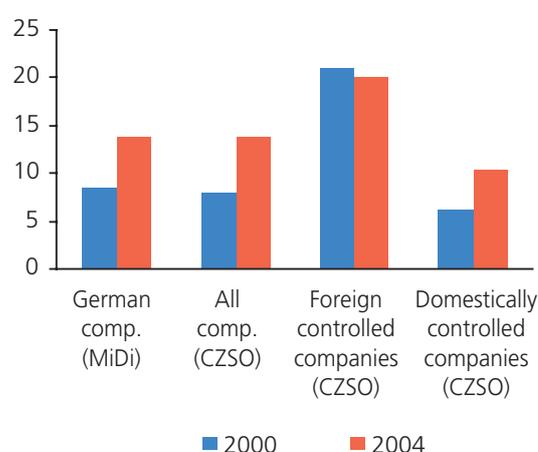
(average annual growth in %)



Source: CZSO, Deutsche Bundesbank

Chart 2 – RoE in 2000 and 2004

(RoE = return on equity in %)



Source: CZSO, Deutsche Bundesbank

¹⁴⁸ The increase in the average company size may also have been due to a change in the asset threshold for FDI reporting in the MiDi database, which more than doubled in 2002.

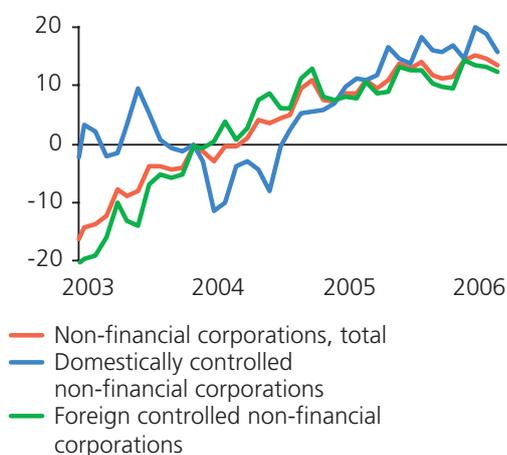
3. INTRA-GROUP FINANCING AND ITS DETERMINANTS

The indirect effect on the financial sector of the recipient of an investment is one of the concerns raised by a strong FDI inflow. If the foreign-owned company has easier access to finances for its operation and investment activities through its parent company abroad, it will effectively reduce its demand for loans from local banks, using funds provided by the foreign owner in the form of capital or loans to finance its development and investment. The effect of lower demand for bank loans is likely to be higher in the cases of privatisation or takeover of a domestic company by a foreign enterprise than in the case of new investment. In both situations, however, the dependence of demand for loans on growth in economic activity may weaken. Banks can respond to the weaker demand by shifting supply towards smaller domestic enterprises, although this may increase the credit risk of their loan portfolios.

However, higher efficiency and profitability, as well as the support provided by a stable foreign owner, put foreign-owned companies at an advantage in seeking external financing from banks, as such companies rank among the least risky debtors. Therefore, especially in the later stages of an investment when the company already has a history, is generating a profit and has sufficient assets to offer as collateral, the demand for loans and the company's total debt can increase or intra-group financing can be replaced by bank loans (see also section 4 of this article).

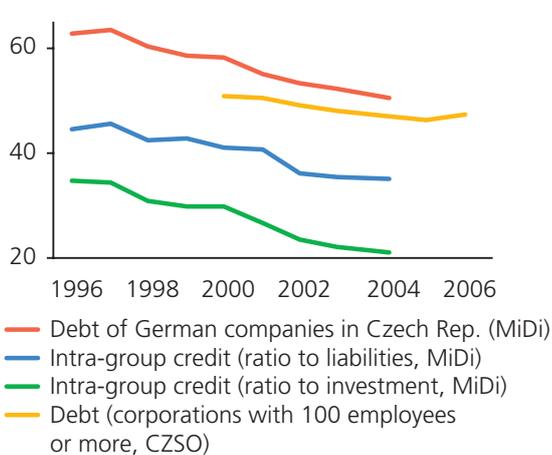
The analysis of the financing of foreign-owned companies was motivated by a decline in the growth rate of loans as compared to domestic companies during the economy's recovery around 2003–2004 (see Chart 3). Chart 4 illustrates that the average debt ratio of companies with German investors was higher than that of all companies with 100 employees or more in the Czech Republic. Intra-group loans accounted for a large share of the debt (around 40% of the total in 2004), with debt and the share of intra-group liabilities in debt both falling over time.

Chart 3 – Growth in loans to non-financial corporations
(annual growth in %)



Source: CNB

Chart 4 – Total debt and intra-group financing
(debt as ratio of liabilities to total liabilities in %)



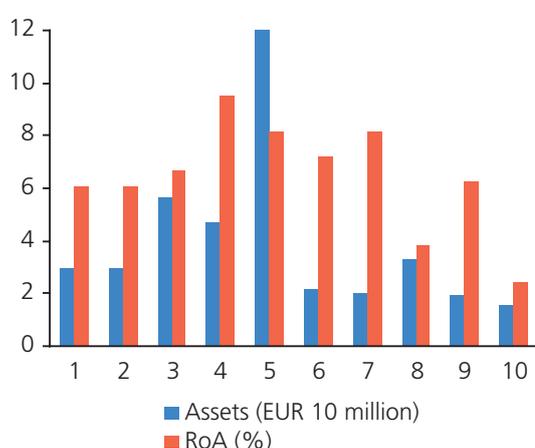
Source: CZSO, Deutsche Bundesbank

The degree of intra-group financing can depend on numerous factors. Some of the determinants can be connected with the company's characteristics and do not necessarily change over the life of the investment (financing strategy, influence of the parent company), while others are related to the life cycle of the investment and therefore the optimum degree of financing by the parent company may change over time. Factors on the external financing supply side, e.g. client interest rates and competition on the banking market, certainly also play a role.

Chart 5 shows that companies with a higher share of intra-group financing are, on average, smaller (have lower assets) and less profitable (as measured by return on assets), even though the influence of profitability is not completely non-linear. Smaller companies may rely more on finance from their parent company, as their size can work to their disadvantage on the loan market (due to a lack of fixed assets as potential collateral). On the other hand, Chart 5 may capture companies at different stages of the investment life cycle. Companies in the initial stage, i.e. smaller and less profitable ones, use credit from the parent company, whereas companies in the later

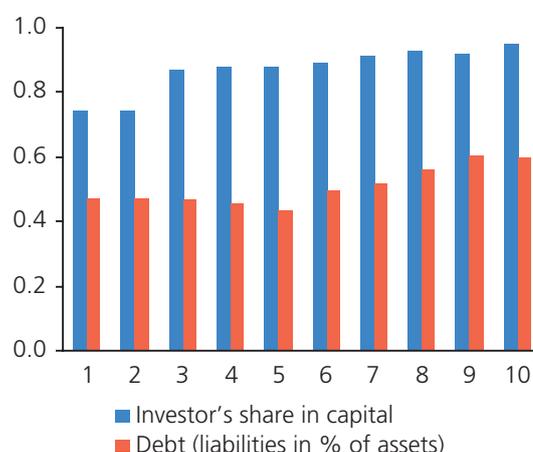
stage are larger, generate profit and tend to obtain finance for their operation from local banks. Chart 6 shows two other possible determinants of the degree of intra-group financing, namely the investor's share in the company's capital and the company's total debt. On average, companies where the investor has a larger share of capital use intra-group financing to a greater extent. This confirms the hypothesis that funds from the parent company are used as a financing instrument mainly where the parent company has a high degree of control of its investment. The company's total debt is another important determinant: companies with higher debt use funds from the parent company to a greater extent. Again, this may be related to the investment life cycle, as a company in the initial stages of its development has higher debt and secures funds for its development from the foreign direct investor rather than local banks. The life cycle of an investment is discussed in detail in the following part of this article.

Chart 5 – Determinants of degree of intra-group financing
(average values in deciles of distribution of degree of intra-group financing, 2004)



Source: Deutsche Bundesbank

Chart 6 – Determinants of degree of intra-group financing II
(average values in deciles of distribution of degree of intra-group financing, 2004)



Source: Deutsche Bundesbank

4. THE LIFE CYCLE OF A FOREIGN DIRECT INVESTMENT

The evolution of the financial indicators of FDI for foreign-owned companies described in sections 2 and 3 was analysed by comparing the averages for the companies existing in the individual years. The changes in profitability or financing may thus have been due to the entry or exit of investors and therefore do not capture the typical evolution of an average foreign direct investment. Neither is the comparison of the profitability and other financial ratios for German investments with ratios for corporations under domestic control entirely conclusive, as the higher profitability of German enterprises may be due to the fact that foreign investors acquired more profitable companies ("cherry picking").

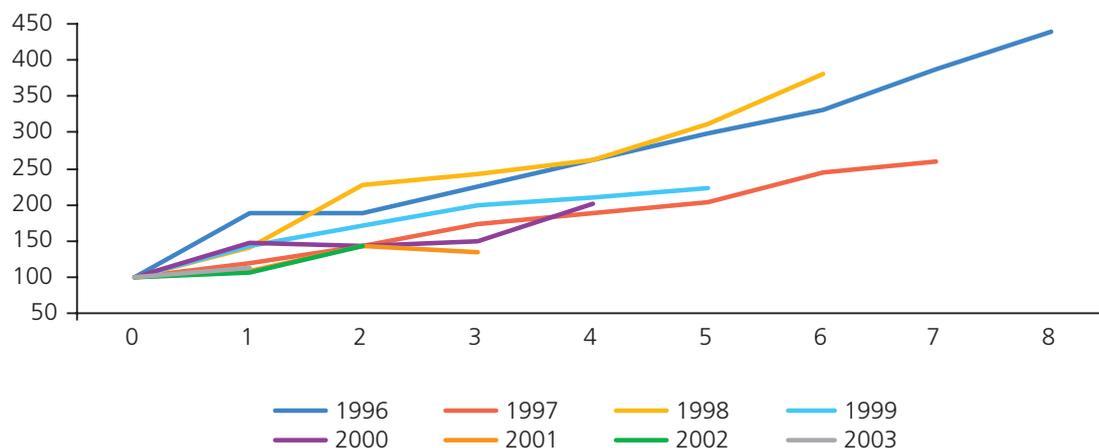
In this section, the average financial ratios always represent the same sample of companies over several years. Companies for which records are available for the whole time span of the investment were selected from the MiDi database. Companies with a complicated ownership structure (i.e. those where the subsidiary has more than one owner or one foreign company owns more than one Czech company) were excluded.¹⁴⁹ Companies were sorted by the year the German owner made the investment in the Czech Republic.¹⁵⁰ This breakdown enables us to assess the evolution of the characteristics of an investment over its life cycle.

¹⁴⁹ Especially in the case of companies where one parent company owns more than one subsidiary, individual data may be affected by potential transfers of production and profit between subsidiaries.

¹⁵⁰ The first year of the firm's existence in the database is regarded as the year when the foreign owner made the investment. Data for companies entering in 1996 are an exception, as they also include all German companies that invested before 1996 (1996 is the first year of the database).

Chart 7 – Evolution of assets after investment

(year zero of investment = 100, %)



Source: Deutsche Bundesbank, own calculations

Following the commencement of an investment, companies with a German owner typically record further growth in assets (see Chart 7). Six to nine years following the commencement of a foreign investment, assets had risen roughly two to four times. The increase in assets occurs with varying intensity for investments from all years. The additional investment in assets is generally distributed quite evenly over time. Current assets usually dominate the structure of the asset growth, followed by tangible and intangible fixed assets, whose rate of growth is also above average. Growth in financial assets is the lowest.

So far, the data on asset growth do not indicate any turning point in the FDI life cycle, as assets are continuing to grow even for relatively old investments (8 years and older). Thus a significant outflow of assets from foreign-owned companies and FDI in general probably cannot be expected in the short to medium term.¹⁵¹

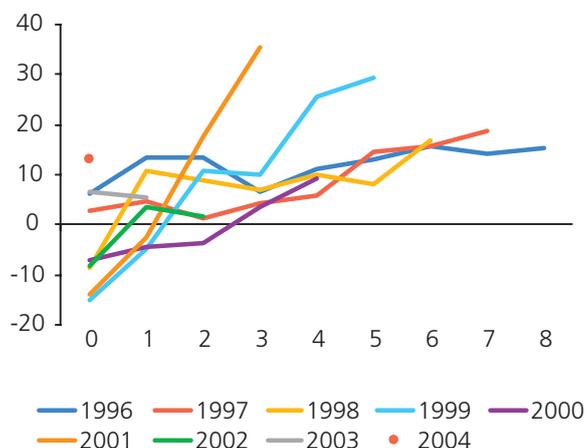
The evolution of return on equity (RoE) in the individual groups of companies according to the year the investment was made (see Chart 8) suggests that the profitability of a foreign direct investment usually goes through a cycle. In the case of acquisitions of domestic companies by a German investor, this would confirm the hypothesis that the entry of a foreign owner has led to a rise in the profitability of the subsidiaries in the Czech Republic.¹⁵² Many investments of this type were designed as restructuring investments where investors picked loss-making companies having potential for growth. In the case of green-field investments, the evolution of RoE reflects high start-up costs, connected with higher depreciation of fixed assets and still low turnover due to the gradual launching of production. Chart 8 also shows that the increase in profitability was sharper in companies which had recorded relatively high losses at the beginning of the investment (investments of 1999 and 2001).¹⁵³

¹⁵¹ This conclusion applies if a relatively long time remains until the end of the period under review. It is also conditional on the sector structure of FDI. It can be assumed that investment motivated primarily by lower wages of employees with a lower standard of human capital can move quite quickly (see also the discussion in section 2 and Table 1). More detailed evidence on the sector structure of investment in manufacturing indicates that German FDI in the Czech Republic has tended to go into facilities with a higher share of value added.

¹⁵² Unfortunately, the MiDi database does not indicate whether the investment was made by acquiring an existing Czech company or in the form of a green-field investment. Anecdotal evidence suggests that both types of FDI were made in the past.

¹⁵³ The high increase in RoE in these companies is to some extent due to their low initial equity, which is the denominator in the RoE ratio. An improvement in the absolute level of profit is thus reflected in a rise in RoE which is much more significant owing to high leverage.

Chart 8 – Evolution of profitability (RoE) after foreign investment
(broken down according to year one of investment, %)



Source: Deutsche Bundesbank, own calculations

TABLE 2 – Distribution of change in RoE into three years after investment

	Total change in RoE	Contributions in percentage points			
		Return on sales	Financial leverage	Assets turnover ratio	Residual - combined effect
1996	0.1	1.1	1.3	-1.5	-0.7
1997	1.6	2.6	-0.6	0.1	-0.4
1998	15.6	16.3	-0.1	-1.9	1.3
1999	25.0	41.5	-11.3	67.6	-72.8
2000	10.9	8.4	0.6	3.7	-1.8
2001	49.1	22.5	3.5	0.9	22.4

Source: Deutsche Bundesbank, own calculations

The comparison also reveals that profitability decreases in some companies after the second or third year. This may be due to additional development of the company and ensuing higher investment costs. Such a decrease occurs more often in companies with higher initial profitability. The chart also shows that the potential for further growth in profitability is somewhat exhausted at a longer time horizon after the commencement of the investment (6 to 8 years), even though profitability remains relatively high. Overall, it can be expected that the impulse to corporate profitability from foreign direct investment will continue into the future, but it will be somewhat weaker than in the past.

In the case of investments taking the form of the acquisition of a Czech company by a German investor, the changes in profitability resulting from the entry of the foreign partner can be analysed by breaking down RoE into three basic components.¹⁵⁴ The first component is the change in return on sales, which indicates the company's ability to generate profit from a given volume of sales. Thus the role of the foreign investor consists in introducing new technology, streamlining production and improving overall labour productivity. Another component is the effect of debt. If debt rises, leverage is strengthened, which leads to an increase in RoE amid an unchanged return on assets. The foreign owner can thus contribute to an increase in RoE by providing funds, by providing an implicit or explicit guarantee for a loan to the subsidiary or by generally enhancing the credibility of the subsidiary in the eyes of creditors. The third channel for increasing profitability is a reduction in the assets turnover ratio, which leads to more efficient use of the company's assets to generate sales. The foreign owner can contribute to an increase in profitability by penetrating into new markets and thereby boosting sales, or by more efficient use of existing assets (e.g. modern inventory management methods, sale of unusable assets, etc.).

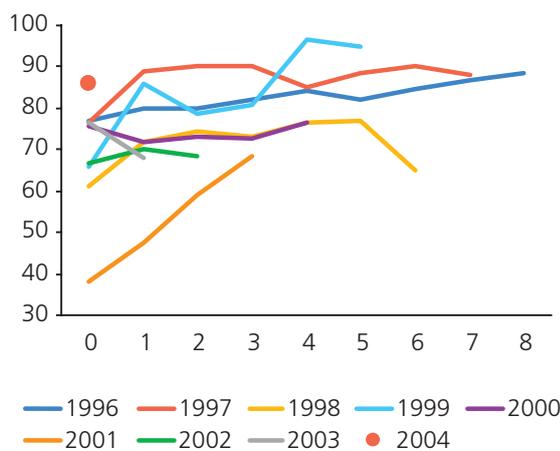
As shown in Table 2, growth in RoE has mostly been driven by increases in return on sales. The influence of debt has been relatively low (perhaps with the exception of investments made in 1996). In some years, however, the positive effect of a decrease in the assets turnover ratio was fairly significant (investments of 1999 and 2000). This was probably linked chiefly with an increase in the companies' sales. The rise in the assets turnover ratio for investments of 1996 and 1998, which made a negative contribution to overall profitability, can be explained by additional investment of these companies, which had yet to generate sufficient sales.

¹⁵⁴ The following relationship holds:
$$RoE = \frac{\text{profit}}{\text{equity}} = \frac{\text{profit}}{\text{sales}} \cdot \frac{\text{sales}}{\text{assets}} = \frac{\text{assets}}{\text{equity}} = (\text{Return on Sales}) \cdot \frac{360}{\text{assets turnover}} \cdot \frac{1}{1 - \text{debt}}$$

The change in RoE can be thus approximated by the change in return on sales, the change in the inverse of the assets turnover ratio and the percentage change in the inverse of the ratio of equity to assets. This approximation is not entirely accurate, with the "residual" in Table 2 reflecting the error of this estimate.

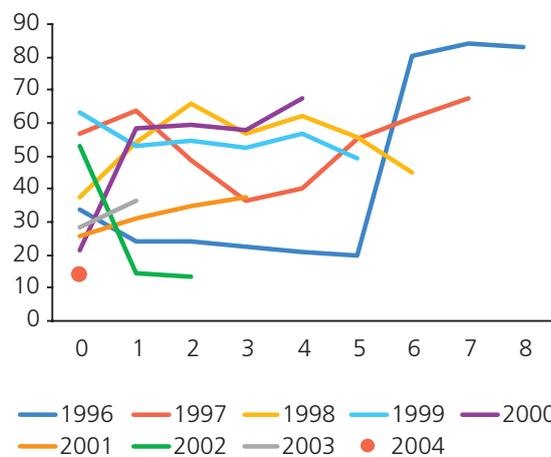
In addition to growth in assets and profitability over the investment life cycle, the structure of balance-sheet liabilities of the subsidiaries of German investors in the Czech Republic was also analysed. In most cases, the share of the foreign company in the equity of the subsidiary¹⁵⁵ showed an upward tendency within three years of the investment as foreign companies expanded their influence over their subsidiaries (see Chart 9).¹⁵⁶ Five to seven years following the commencement of the investment, the German owner's share in equity in some companies had declined slightly, maybe reflecting the start of an outflow of profits to Germany.

Chart 9 – Share of parent company in equity of subsidiary (%)



Source: Deutsche Bundesbank, own calculations

Chart 10 – Share of debt to parent company in total debt (%)



Source: Deutsche Bundesbank, own calculations

In most cases, the debt of the subsidiary declined over the time span of the German investments. However, loans from the parent company (which are also included in the FDI statistics) also appear within the subsidiaries' external funds. As shown in Chart 10, the share of loans from the parent company in total external funds increased in many companies. Where the investment was made in the form of an acquisition, loans from the foreign parent company may have crowded out bank loans (see also section 3 of this article).¹⁵⁷

The causes of this may have been, for example, that the parent company was looking for a way of allocating its free funds or that it borrowed at home and transferred a part of the loan to the Czech Republic. Lower interest on the loan granted to the parent company, which had higher creditworthiness and a longer credit history, or economies of scale in the case of a relatively large loan, may have played a role here. In some cases, however, the share of loans from the parent company has decreased recently, while the debt ratio has remained unchanged, which might indicate an improvement in the efficiency of the Czech credit market or a situation where subsidiaries no longer need direct financial aid from their parent companies. Macroeconomic stability in the Czech Republic and very low interest rates, which are currently even lower than in the euro area and are motivating the subsidiaries of foreign companies to draw loans from local banks to a greater extent, are also having a positive effect.

¹⁵⁵ i.e. the share of the parent company in capital plus its shares in retained earnings, profit for the current financial year and capital funds.

¹⁵⁶ This growth in the investor's share was partly voluntary, but may also have been due partly to mandatory purchase offers for listed companies. The efficiency of the capital market with regard to takeover bids is analysed in the article *Takeover bids and capital market efficiency* in the thematic part of this report.

¹⁵⁷ However, it is difficult to determine whether the higher share of loans from the parent company is due to difficult access of the subsidiaries to loans ("credit crunch") or whether loans from the parent company crowd out bank loans in a situation where banks would be willing to lend. It can be assumed that the former reason prevailed in the initial stages of foreign investments, when FDI contributed significantly to the removal of market imperfections and offered a valuable alternative to bank financing. This motivation is probably somewhat weaker now.

5. CONCLUSIONS

The results of the analysis confirm the hypothesis that where FDI took the form of an acquisition of a Czech company, the entry of the foreign owner resulted in an increase in the profitability of the domestic company, primarily by increasing its ability to generate profit on a given volume of sales. Some companies also benefited from a decline in the assets turnover ratio, probably reflecting growth in orders thanks to the foreign investor.

Foreign-owned companies generally do not face a lack of funds to finance further development and growth in assets. Intra-group financing, i.e. loans provided by the parent company to its Czech subsidiary, played an important role in the financing of corporate growth. Thus the hypothesis that loans from domestic banks were partly crowded out by loans from foreign owners was confirmed to some extent. However, the direction of the causality is not necessarily clear, as the loan from the foreign owner may have been requested by the subsidiary in response to an insufficient supply of financing from local banks.

Although there are some indications that the life cycle of German investment in the Czech Republic might have entered its later stages, these effects are not sufficiently conclusive as yet. The risk of liquidation of foreign direct investments thus seems relatively low.

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