Direct investment and financial constraints before and during the financial crisis

The financial and economic crisis temporarily resulted in massive distortions in international trade and cross-border capital flows, including a sharp slump in global direct investment stocks in 2008 (-14%). However, enterprises' exposures abroad have since recovered and stocks are currently even recording new highs. In contrast to these international developments, Germany's direct investment relationships proved to be quite robust during the crisis and thus had a stabilising effect on Germany's financial ties with the rest of the world.

This article describes the main developments in Germany's direct investment relationships immediately before and during the financial crisis and makes a comparison with developments abroad. Furthermore, it examines the impact of potential financial constraints on direct investment activity as well as on foreign trade. It emerges that real economic factors such as productivity and size play an important role in the internationalisation of domestic enterprises. However, in addition, financial factors, such as the level of cash flows generated, are also of key importance. A lack of access to external financing can ultimately pose an obstacle to cross-border activities.

Although German banks tightened their credit standards during the crisis, no perceptible constraints on financing options can be identified for enterprises in Germany for the period under review, including with regard to external financing of foreign activities. This is shown, *inter alia*, by the results of the Bundesbank's bank lending survey, as well as other survey results.

Global developments in direct investment

Global direct investment at record level again following crisis-induced decline

According to data from UNCTAD,[1] global direct investment stocks reached a new record level of around US$19 trillion at the end of 2010. While in the wake of the global financial crisis, particularly in 2008, a strong decline in direct investment activity was recorded, in global terms direct investment returned to its pre-crisis level as early as the end of 2009. However, there were strong regional differences. For example, at 4%, the crisis-induced declines in developing countries were the least pronounced. By contrast, in developed economies direct investment stocks fell by one-sixth in 2008 and in emerging market economies they dropped by as much as one-third. However, their respective recoveries from 2009 onwards were all the more vigorous.[2] The rebound in direct investment after the initial phase of the financial crisis was driven above all by greenfield investments, ie the setting up of new production and sales sites on greenfields. Although cross-border mergers and acquisitions (M&As) have also recorded growth since their crisis-induced low at the end of 2008/beginning of 2009,[3] this lagged far behind developments in greenfield investments. M&As, which are frequently partly debt-financed, accounted for only just over one-fifth of global direct investment inflows in 2010, whereas in 2005, at the peak of the last M&A boom, their share was more than twice as high.

Industrial countries remain focus of direct investment

Developed economies accounted for around two-thirds of all direct investment stocks at the end of 2010. These economies were thus still the main direct investment locations. In 2010, Germany was one of the five largest target countries for foreign direct investment, measured in terms of stocks valued in US dollars,[4] alongside the United States, Hong Kong, the United Kingdom and France. However, with the exception of Germany, it is precisely in these countries that current levels are still quite significantly below pre-crisis levels.

Recovery in emerging market and developing countries

It is noteworthy that, in 2010, for the first time emerging market and developing countries combined accounted for more than half of global direct investment inflows. At the same time, they were themselves increasingly active as direct investors, often also within their own group of countries.[5] This demonstrates the sharp growth in the importance of emerging market and developing countries in the area of direct investment and indicates that economic ties between these countries are becoming ever stronger. This is likely to tend to also have a positive impact on growth in these countries and on international trade. However, at the same time, it can be seen that direct investment focuses on specific lo-

1 See United Nations Conference on Trade and Development (UNCTAD) (2011), World Investment Report 2011 and UNCTADstat.
2 The UNCTAD data must be interpreted with a certain degree of caution. First, market price fluctuations play a role, as some countries value their stock data at market prices. Emerging market economies, in particular, experienced an especially sharp decline in share prices in 2008. In addition, exchange rate fluctuations vis-à-vis the US dollar are reflected in the data. Furthermore, the direct investment stocks of countries without separate stock statistics – this applies in particular to many emerging market and developing countries – are estimated using cumulated balance of payments flows. Nevertheless, the UNCTAD assumes a significant decline in stocks in 2008 owing to withdrawals of capital, write-downs, losses and, in some cases, loans to parent companies.
3 Source: Bureau van Dijk.
4 Source: UNCTADstat.
5 See UNCTAD (2011), loc cit.

cations within this group of countries. Thus in 2010 more than one-third of the funds flowed to China (excluding Hong Kong), Brazil, Russia and Singapore.

German direct investment

Stock statistics for Germany currently only available up to 2009

A comprehensive analysis of German direct investment using current data is possible to a limited extent only. Data on German direct investment stocks, broken down by partner countries and sectors, derived from Deutsche Bundesbank surveys are currently only available up to the end of 2009. The data for 2010 contained in the adjacent chart have therefore been taken from the annual international investment position. They are partly based on estimates and only a rough regional or sectoral breakdown is available. Furthermore, market values rather than book values (which are used for the stock statistics) are used in the international investment position for listed subsidiaries. In spite of these limitations, the most important trends during the financial and economic crisis can be traced.[6]

German direct investment abroad dampened during crisis period

German foreign investment saw quite buoyant growth in the run-up to the crisis and until the end of 2007. Despite a marked decline, it continued to grow, in euro terms, even during the financial crisis.[7] Thus German enterprises went against the global trend mentioned above and consequently maintained their cross-border exposures. In particular, they did not experience a sharp slump in 2008. The recovery of the real economy and stabilisation of the financial markets resulted in German direct investment abroad

Primary direct investment stocks

1 Data according to international investment position; partly estimated.

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going back up by €37 billion in 2009. The increase focused mainly on euro-area countries and was predominantly in the form of equity capital. Moreover, declining annual losses at foreign subsidiaries played a role.

In the opposite direction, ie foreign direct investment in Germany, there has also been a

6 Extensive data on direct investment are published by the Bundesbank in its annual Special Statistical Publication 10 "Foreign Direct Investment Stock Statistics". The annex of the publication contains methodological notes on reporting requirements and the calculation of stock data. To improve the comparability with international statistics, as well as with the data from the balance of payments, so-called primary direct investment is used in this article. Further information on foreign capital links, particularly with indirectly held subsidiaries, can be found in the Special Statistical Publication. See www.bundesbank.de/download/statistik/stat_sonder/statso10_en.pdf.
7 This is at odds with the results of the UNCTAD, but these are calculated in US dollars. According to these results, Germany's current stock level is still around 3% below the peak value.

Foreign direct investment in Germany also stable

slight easing in the upward trend since 2007, but without this resulting in a crisis-induced slump like that experienced elsewhere. Only in 2009 were direct investment stocks slightly down on the year (by €6 billion), which was on balance solely due to a decline in intra-group loans, which are also classified as direct investment, in line with international standards.

Differentiated analysis required

On the basis of the direct investment stock data, it therefore appears that Germany weathered the financial crisis quite well. The specific influences of the financial crisis are shown more clearly by means of a closer analysis of the components which direct investment comprises than through a breakdown by country or economic sector.

Still considerable growth in 2007

In 2007, German investors' cross-border corporate investment still recorded considerable growth (+€98 billion). Foreign direct investment assets in Germany also increased (+€40 billion). Both were driven by equity capital, which was expanded significantly due, among other things, to continuing strong profitability in 2007 and consequently higher reinvested earnings.

Signs of crisis-induced slowdown as early as 2008

There were clear signs of the global recession and high losses in the financial sector as early as 2008. German direct investment abroad rose by a mere €8 billion and foreign direct investment in Germany went up by only €10 billion. Lower profitability and the associated decline in annual surpluses or a marked increase in annual losses compared with the previous year at many direct investment enterprises resulted in a drop in equity capital. This was particularly pronounced in the case of branches of German enterprises abroad. To compensate, affiliated German enterprises increased loans to foreign direct investment enterprises. Here, transfers of funds to non-resident financial intermediaries were a key factor. As regards foreign direct investment in Germany, there was also an expansion in loans from foreign investors to their German subsidiaries. The loans were predominantly granted to holding companies.

Marked decline in annual losses in 2009

Year on year, in 2009 both German subsidiaries abroad and affiliates of foreign proprietors in Germany were able to considerably reduce possible annual losses, especially in the banking sector (by €17 billion in each case). German foreign branches as a whole saw their annual surpluses rise by €8 billion. At the end of 2009, German direct investment stocks abroad amounted to €892 billion, while foreign stocks in Germany totalled €651 billion.

Primary direct investment difficult to interpret with regard to sectoral structure

Information on the sectoral structure of direct investment can only be obtained to a limited extent from the data, as holding companies at the first (primary) level are a preferred form of investment (over half in the case of German foreign investments, around two-thirds in the case of foreign investments in Germany). Nevertheless, it can be concluded that the manufacturing sector, and in particular the chemical industry, mechanical engineering and manufacturers of vehicles play a predominant role. Furthermore, the banking and insurance industry is highly interconnected on a global level.

Industrial countries dominate in regional terms, …

In regional terms, industrial countries dominate both as an investment destination (share: 88%) and as a source (97%).[8] Alongside the United States (16% and 9% respectively), European countries play a major role in this context, especially the euro-area partner countries, including in particular the Netherlands. In addition, the United Kingdom and Switzerland are of considerable importance. The United States has played an ever smaller role in recent years, not least because emerging market economies have provided new growth markets. By contrast, direct investment relationships with the Netherlands have seen quite buoyant growth. As the Netherlands, like the other Benelux countries, is a favourite holding company location, it cannot be ruled out that investors from Germany and other countries, including the United States, merely use it as a springboard and the actual funds thus originated from or flowed to third countries.

… however, dynamic developments in BRIC countries

German direct investment in the so-called BRIC countries (Brazil, Russia, India and China) has been notably dynamic, albeit still at a low level, in the past few years. It recently accounted for 5% of German foreign investment stocks.

Transaction data from the balance of payments available up to 2011

Flow data from the balance of payment statistics can be used to analyse developments until into 2011. These give a similar picture for the period of time described above, particularly the dynamic growth until 2007 and moderation in 2008.[9] The data show a further increase in both direct investment in Germany and German direct investment abroad in 2009 and 2010. Any deviations from the stock data may arise because these data also take into account valuation effects (owing *inter alia* to exchange rate changes). However, the data available to date for 2011 indicate a renewed slowdown. The intensification of the financial crisis since May 2010 combined with a plausible time lag for direct investment projects could have been a factor in this, as there was probably a tendency to put off foreign investment in light of increasing uncertainty. Thus, at €40 billion, in the first ten months of 2011, German direct investment abroad was around 50% down on the year. German enterprises above all provided their foreign affiliates with equity capital and reinvested earnings.[10] By contrast, funds from abroad flowed to German direct investors via intra-group reverse loans, mainly by means of short-term financial loans from foreign holding companies domiciled in the Benelux countries. Non-resident enterprises increased their domestic investment in 2011, above all via reinvested earnings and intra-group loans.

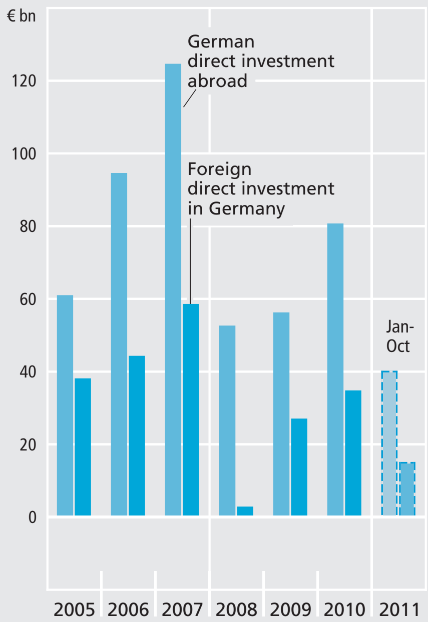
Direct investment and financial constraints

Fundamental considerations

Although developments in German direct investment relationships remained comparatively robust during the financial crisis, a

8 Data for 2009 in each case.
9 Detailed information on direct investment transactions over the past four years, broken down by economic sector and country, as well as methodological notes, can be found in the publication "Direct investment acc. to the balance of payment statistics", http://www.bundesbank.de/download/statistik/stat_direktinvestitionen_en.pdf.
10 The reinvested earnings of the respective current year are based on estimates and are generally subject to large-scale revisions.

Direct investment flows according to the balance of payments statistics



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marked downturn can nevertheless be observed. Whether or not this downturn was due to the crisis is therefore a matter of particular interest. Cross-border direct investment activities may have been impaired by several factors during the financial crisis. First, demand effects should be mentioned. The increased risk aversion of investors may have resulted in them being less interested in expanding their cross-border activities. Moreover, however, direct investment may also have been affected at least to some extent by a lack of financing options. In principle, different transmission channels are conceivable. On the one hand, enterprises' own funds were reduced owing to falling turnovers and lower earnings.[11] On the other hand, the possibilities for accessing capital market funding were becoming more and more limited and expensive, and access to bank loans was being restricted by tighter credit standards during the crisis period.[12] This is likely to have been of particular significance for large-scale M&As and the activities of private equity investors, which witnessed a sharp drop owing to a lack of financing options. According to data from the M&A database Zephyr,[13] the number of completed cross-border take-overs involving German enterprises and with a known transaction value of at least €1 billion fell from 19 in the pre-crisis year 2007 to a mere five in 2010. Furthermore, the number of transactions that could be financed by new bank loans also fell during the financial crisis. This indicates that precisely these large-scale projects suffered from a lack of funds being provided by external financiers. Survey results also support this assessment.

DIHK survey points to financing problems for large-scale projects abroad

The survey by the German Chamber of Industry and Commerce (DIHK) on foreign investment, which is conducted each spring, provides a good impression of the impact of potential financing restrictions on the cross-border investment behaviour of enterprises in Germany.[14] According to the 2011 spring re-

11 See also the article "German enterprises' profitability and financing in 2010" on pp 15-28 of this Monthly Report.
12 According to the German results from the Bank Lending Survey (BLS), which is regularly conducted throughout the Eurosystem, banks' credit standards tightened during the crisis, but there is no indication of a consequent credit squeeze for enterprises wishing to invest. However, the BLS does not include specific questions on the foreign investment financing terms. The results of the BLS for Germany can be found at http://www.bundesbank.de/volkswirtschaft/vo_veroeffentlichungen.en.php.
13 Source: Bureau van Dijk.
14 See DIHK (2011), Auslandsinvestitionen in der Industrie, spring 2011 and earlier editions (available in German only).

port, above all those industrial enterprises that perceive financing as a business risk for the coming months are refraining from foreign investment. Only just under one-third of them said that they currently want to invest abroad. This is significantly less than is the case for the other industrial enterprises surveyed. According to the DIHK's assessment, the business situation of enterprises experiencing financing problems is often still so uncertain that they shied away from expanding abroad. Experience has shown, the DIHK argues, that investment abroad is associated with higher risks and banks are therefore more cautious about providing loans for this purpose. In the preceding years (2010 and 2009) it was furthermore constantly held that enterprises that invested abroad saw a deterioration in their credit conditions far more frequently than companies that were not active abroad. And this was the case despite the fact that industrial enterprises that want to invest abroad thought that they were in a better situation and therefore gave more optimistic business expectations, which should actually make it easier to negotiate better credit conditions. Nevertheless, foreign investments were apparently regarded as particularly risky. Furthermore, in the case of large-scale financing projects, given a lack of trust among the credit institutions as well as bank rescue measures being focussed at a national level for the most part, it has proven particularly difficult to form international bank consortia. Reports to the effect that it is apparently more difficult to obtain larger than smaller loans for foreign investments tie in with this. Those enterprises that invest in marketing and customer services are therefore often less affected by a deterioration in financing conditions than those that want to invest abroad to open up markets and cut costs, thereby requiring larger sums of money – quite apart from large-volume debt-financed M&As.

Bundesbank analyses

Conventional models negate influence of financial constraints

Academic research has so far paid little attention to the relationship between foreign trade, direct investment and financial markets. Conventional models assume that financial constraints do not influence enterprises' decisions regarding whether to sell their products abroad or to invest abroad; rather, differences in productivity at firm level are of relevance.[15] However, multinational enterprises also differ from purely national enterprises in other respects. For example, the latter have a comparatively higher share of borrowed funds and lower cash flows. This indicates that debt financing difficulties can present an additional barrier on the path to expanding abroad.

The relevance of financial barriers for enterprises' expansion abroad has therefore been examined more closely in two Bundesbank

15 The "new" new foreign trade theory on the basis of heterogeneous firms was considerably influenced by M J Melitz (2003), The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity, Econometrica, 71 (6), November 2003, pp 1695-1725, and E Helpman, M J Melitz and S Yeaple (2004), Exports versus FDI with Heterogeneous Firms, The American Economic Review, 94 (1), March 2004, pp 300-316.

Two Bundesbank studies on the relevance of financial barriers

studies.[16] Contrary to the assumptions made by conventional models, there are good reasons for why not only an enterprise's productivity but also its access to external capital has an influence on its internationalisation decision, as it is relatively difficult to put up collateral for cross-border investments and debt financing is therefore comparatively expensive. Although the empirical part of the projects covers the period prior to the crisis, the results nevertheless help to provide a better understanding of the developments during the crisis and show possible economic policy approaches.

Theoretical model and empirical analysis with micro data

These hypotheses are verified empirically using information on affiliates of German enterprises from the Deutsche Bundesbank's Microdatabase Direct investment (MiDi)[17] and German enterprises' balance sheet data.[18] The data enable potential financial constraints and productivity to be measured for enterprises operating in Germany only as well as for exporting enterprises and the parent companies of multinationals. Furthermore, they permit an analysis of financing bottlenecks for foreign branches, thereby allowing the relative significance of financial constraints at parent enterprise and affiliate level to be determined. In contrast to earlier studies, which focus on enterprises in the manufacturing sector, the data record also includes services sector enterprises.

Different determinants for establishing branches and their business volumes

Theoretical considerations give reason to assume that the decision about whether to become active abroad tends to be determined more by the financial constraints facing German investors than by any financial constraints facing existing foreign affiliates. The empirical analysis shows a kind of hierarchy for the financing of production in foreign branches: while financing bottlenecks for the parent company are significant to the likelihood of establishing an affiliate abroad, with regard to the expansion of affiliates, above all the latter's own financing options are of relevance.

Do financing conditions also influence the choice between exports and direct investment?

Financing conditions can also influence the decision about whether to opt for exports or direct investment abroad. This is because the fixed market entry costs are generally lower for exports than for direct investment. By contrast, the variable costs of trade are higher as the products must first be brought onto the foreign market, while in the case of an investment abroad, they can be produced on site.[19] Financial constraints should therefore have a greater impact on direct investment activities than on exports. In principle, it can be expected that given the costs for foreign investment, more productive enterprises that are less subject to financial constraints are more likely to become active abroad.

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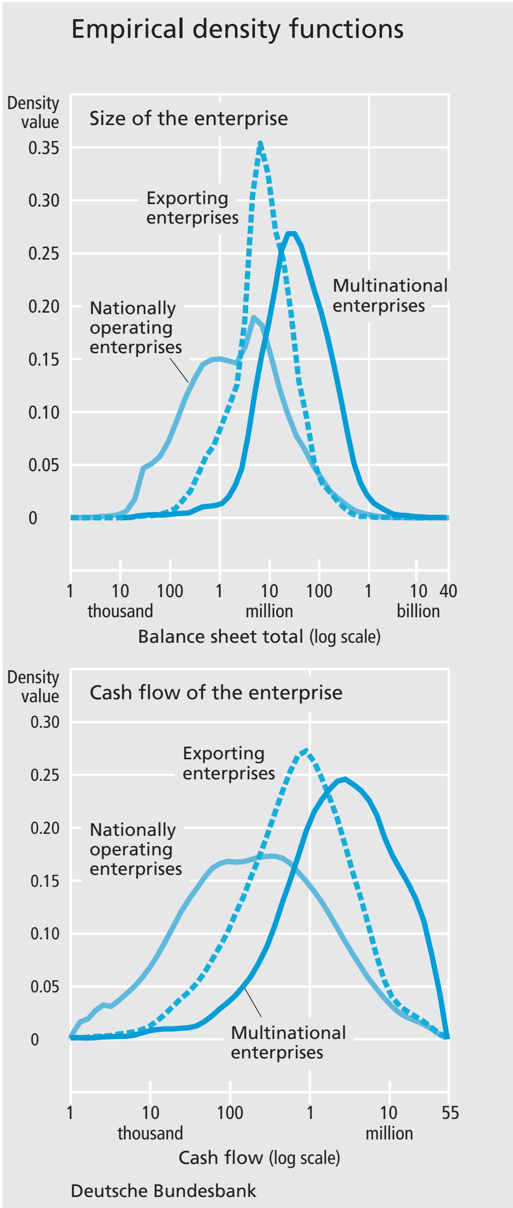
16 See C Buch, I Kesternich, A Lipponer and M Schnitzer (2009), Financial constraints and the margins of FDI, Discussion Paper of the Research Centre of the Deutsche Bundesbank, Series 1, No 29/2009, and C Buch, I Kesternich, A Lipponer and M Schnitzer (2010), Exports versus FDI revisited: Does finance matter?, Discussion Paper of the Research Centre of the Deutsche Bundesbank, Series 1, No 03/2010.
17 See A Lipponer (2009), Microdatabase Direct investment – MiDi: a brief guide, www.bundesbank.de/download/vfz/fdi/vfz_mikrodaten_guide.pdf.
18 Sources: Dafne (Bureau van Dijk) and Hoppenstedt.
19 In the theoretical model of the second study, so-called horizontal direct investment is assumed for the sake of simplification. In this context, trade and direct investment are to be regarded as substitutes. The empirical analysis also includes vertical direct investment, where the outsourcing of parts of production to countries where production costs are lower makes a positive contribution to cross-border trading activities.

Productivity and financing conditions crucial factors

The empirical results of both studies[20] confirm that both an enterprise's productivity as well as financing requirements have a demonstrable influence on internationalisation decisions. Specifically, the analysis produces three key results. First, firm size (positive), cash flow (positive) and the fixed asset share in the balance sheet total (negative) have a significant impact on exports and direct investment. This shows that, alongside the size of an enterprise, variables that are closely connected with an enterprise's financing options also play a role. The higher the cash flow, the less external financing is needed; the more fixed assets are required, the higher the funding needs.[21] Second, financial constraints have a greater impact on direct investment than on exports, which is consistent with the higher fixed costs for direct investment. Third, financing restrictions influence the fundamental decision concerning whether to go abroad at all. The finding that financing issues are only relevant for those enterprises that can actually consider expanding abroad owing to their productivity is particularly interesting. Empirical studies that do not take financing requirements and/or the type of internationalisation decision into account can consequently produce biased results.

Characteristics of individual enterprises play a decisive role

The significance of the characteristics of individual enterprises with regard to the decision about whether to export or conduct direct investment is also shown very vividly in the so-called kernel density estimates[22] of the respective parameters. The chart on page 65 shows this by means of the example "Size of the enterprise", measured in terms of the balance sheet total, and the example "Cash flow of the enterprise". Small enterprises and



20 See also comments on pp 66-67.
21 The impact of financing restrictions is calculated indirectly in the analyses via, first, possibly (too) low internal funds in the case of a given financing volume or, second, in the case of generally high funding needs. These data do not allow conclusions to be drawn regarding possible credit rationing on the part of the banks. However, the findings of the BLS for Germany make this highly implausible.
22 A kernel density estimate is a continuous estimate of an (unknown) probability distribution based on a sample. Its discrete counterpart is the histogram.

Financial constraints and choices between direct investment and exports

The impact of financial constraints on export activity and direct investment is discussed in two Bundesbank discussion papers.[1]

On the one hand, the estimates are based on the Bundesbank's Microdatabase Direct investment (MiDi), which mainly provides information on foreign affiliates. This information was supplemented by balance sheet data on the German parent companies from the Dafne database (provided by Bureau van Dijk) and Hoppenstedt. The data cover the pre-crisis period 2002-2006, and the results are therefore not distorted by developments in the financial crisis. After an outlier correction, information from just under 90,000 German firms was entered into the analyses; of these, around 6% had foreign subsidiaries in more than 100 countries altogether and roughly as many companies were exporters. The number of data points that are actually entered into the individual estimations depends on various factors. There was a particular request that the underlying data for all firms in the overall period be made available in full for the Heckman estimation tabulated here.

First, hypotheses on the effects of potential factors are derived by means of theoretical models. These are then examined using various empirical approaches. A distinction is made here between the "extensive" margin and the "intensive" margin. The former examines the decision to be present at all in a country (with exports or direct investment). The latter focuses on the respective size of the exposure. This can involve the number of affiliates, the size of the foreign turnover or the scope of investment. Univariate and bivariate probit regressions using 0-1 dummy variables are employed accordingly. In addition, count data models (Poisson, Negative Binomial and a Zero-Inflated Poisson model to control for the high number of zeros in the observations) as well as fixed effects estimators are used at the intensive margin. The purpose of the latter in the estimate is to take account of firm-level characteristics which are not (or cannot be) incorporated explicitly, the "unobserved heterogeneity". The subdivision of firms by size and sector allows effects to be allocated to the individual subgroups and ensures the robustness of the results.

One approach which enables both decisions to be modelled simultaneously is the Heckman selection model. The results of the Heckman selection model in relation to foreign direct investment (FDI) are shown in the table on page 67. The dependent variable of the regression model is the turnover of the respective domestic multinational enterprise i in the corresponding host country j at time t. In order to counter endo-

1 See C Buch, I Kesternich, A Lipponer and M Schnitzer (2009), Financial constraints and the margins of FDI, Discussion Paper, Deutsche Bundesbank Research Centre, Series 1, No 29/2009, and C Buch, I Kesternich, A Lipponer and M Schnitzer (2010), Exports versus FDI revisited: Does finance matter?, Discussion Paper, Deutsche Bundesbank Research Centre, Series 1, No 03/2010. — **2** In order to be able to differentiate between the two decisions, the estimated equations for

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geneity problems in the company-level data used, micro-level explanatory variables are entered in the estimates with a one-period time-lag. The not excessively high value of 0.183 reported for the correlation of the residuals from volume and selection equation (Rho) shows that the independent estimation of volume and selection equation is only slightly distorted and that the errors of individual estimates are still within acceptable limits; the insignificant Mills ratio also indicates this. The additional results shown by Buch *et al* (2009) from the separate estimates for extensive and intensive margin are therefore likewise valid. A further result from the Heckman model is that certain factors obviously drive the probability of setting up an affiliate in a country, but not the size of the investment. This includes, at firm level, the cash flow. Similarly, country-level variables such as GDP or per capita income of the host country only have an effect on the decision to open an affiliate, but not on turnover there. Other variables have a similar effect on both margins or – presumably[2] – only on the volume.

A general summary of the results of both studies and possible economic policy implications can be found from page 63 onwards.

Affiliate turnover of firm i in country j

Item	Volume	Selection
Log (balance sheet total) of parent i in $t–1$	0.316***	0.144***
	(0.047)	(0.014)
Log (cost efficiency) of parent i in $t–1$	– 0.540***	– 0.179***
	(0.094)	(0.041)
Debt ratio of parent i in $t–1$	0.047	– 0.073
	(0.113)	(0.056)
Log (cash flow) of parent i in $t–1$	0.005	0.064***
	(0.028)	(0.013)
Fixed asset share of parent i in $t–1$	– 0.688***	– 0.517***
	(0.220)	(0.091)
Log (GDP) in host country j	0.090	0.291***
	(0.081)	(0.009)
Log (GDP per capita) in host country j	– 0.017	0.037***
	(0.038)	(0.014)
(Weak) contract enforcement[3] in country j	– 0.019***	– 0.016***
	(0.006)	(0.003)
Retained earnings / balance sheet total of affiliates from i in j in $t–1$	0.326**	
	(0.155)	
Debt ratio of affiliates of i in j in $t–1$	– 0.044	
	(0.083)	
Log (direct investment of German banks) in host country j	0.090***	
	(0.015)	
Constant	5.903***	– 5.045***
	(1.704)	(0.572)
Number of observations (company-country-year)	57,672	
Censored observations (zeros)	55,373	
Mills ratio	0.166	
	(0.332)	
Rho	0.183	

***, **, * = significant at the 1%, 5% 10% level. Standard errors in parentheses.

volume and selection must be different. Therefore, variables for which it can be assumed a priori that they influence the volume rather than the basic investment decision were only included in the volume equation. — **3** Source: World Bank, Doing business database, www.doingbusiness.org: Number of steps required to enforce a contract.

those with a small cash flow stay "at home" and exclusively serve the national market, while medium-sized enterprises export and large high-earning enterprises operate with foreign branches. The overlaps in the data make it clear that the theoretically derived results do not apply in every individual case. A fundamental tendency is, however, obvious.

Implications for economic policy

The research papers do not provide a direct test for the influence of policy measures on enterprises' access to foreign markets. However, economic policy implications can be derived from the results. On the one hand, measures that increase the productivity of enterprises ultimately make it easier for them to become active in foreign markets. On the other hand, however, the results also highlight the significance of financial factors. Thus if enterprises lack access to external financing, this can pose an obstacle to foreign investment.

Implications of the crisis

With regard to the implications of the crisis, how many enterprises withdraw completely from foreign markets in the wake of a crisis is of significance. If withdrawal from the markets played an important role in the adjustment process, this would have longer-term consequences for German enterprises' economic activities abroad, as the return to these markets entails high entry costs. By contrast, if there is only a drop in turnover, a recovery of the global economy also has a direct positive impact on foreign economic developments. This seems to have been the case for German foreign exposures in light of the marked export recovery from 2009 onwards.

Conclusion

Unlike many other countries, Germany's cross-border direct investment did not experience a pronounced slump during the financial crisis, but rather only a moderation of the upward trend. The willingness to invest abroad on the one hand and of foreign investors to invest in Germany on the other also witnessed a rapid recovery. Yet uncertainty persists, as may be inferred from the subdued direct investment activity to date during 2011. The risks associated with cross-border investments are also likely to dampen enterprises' direct investment activities given the increasing uncertainty during the financial crisis with regard to further economic and political developments.