

Christine Borrmann, Rolf Jungnickel, Dietmar Keller

International Mobility of Employment and Production – Implications of the Opening-up of Eastern FDI Locations for German FDI^a

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HWWA, Neuer Jungfernstieg 21, 20347 Hamburg
Christine Borrmann, Tel. +49 40 428 34 449; e-mail c-borrmann@hwwa.de
Rolf Jungnickel *, Tel. +49 40 428 34 411; e-mail jungnickel@hwwa.de
Dietmar Keller, . +49 40 428 34 476; e-mail keller@hwwa.de

* corresponding author

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1. INTRODUCTION

Internationalization was one of the main trends in German, as well as international, economic development during the past decade.¹ German outward FDI stocks more than tripled alone from 1996 to 2001. More than 4.5 Mio. persons were employed with German affiliates abroad by the end of 2001. This was equivalent to 11.5 % in relation to domestic German labour force, up from 8.3 % in 1996. Foreign production, as measured by sales of foreign affiliates, more than doubled in this five-year period, while foreign trade of goods and services „only“ increased by slightly over 50 %.

The opening-up of CEE countries was an important factor in this development. It did not only increase the number of potential host countries with low labour costs or big sales potential or geographic and cultural proximity, but also offered completely new combinations of important location factors and low transaction costs: proximity, low wages, good supply of well qualified labour, dynamic markets and fairly good administrative and legal certainty, not least resulting from integration with the EU. These fundamental changes greatly reduced transaction costs for FDI in the region and effect location decisions. Past location decisions could be re-evaluated, existing operations in the region could be expanded and firms that had not done so before could be induced to take up foreign operations in the region. International mobility of production and employment could have increased significantly in the course of this change in the regional structure of FDI.

In the following, we will be dealing with a rarely analysed aspect of the “new international mobility” of employment and production. Our main interest lies in the question to what extent location decisions of German internationally operating firms are interdependent. Does growth in the East go along with decline elsewhere or is growth in the winning regions additional to or independent from operations at other places? In the last-mentioned case structural change takes place by re-directing growth while in the first case former location decisions are revised when existing investment is re-allocated. This aspect of FDI growth and structural change has rarely been dealt with (Sethi et al. 2003). Information on these issues should improve our understanding of how structural change in FDI is brought about and how mobile foreign production is in times of globalization. We focus on regional changes brought about by the opening-up of CEE countries.

¹ Most recently, the outflow of FDI has decreased substantially both from Germany and on an international scale (Bundesbank, BoP statistics; OECD 2004). It remains an open question if this indicates a trend reversal or simply is the consequence of sluggish domestic economic development. Since annual FDI outflows still are positive, the stock of FDI continues to grow, although at a lower rate.

We start out with formulating our hypotheses and a brief survey of related literature (part 2). The following part (3) describes our data base and methodology. Then, on a macro basis, we analyze the sequencing of FDI locations and how this was affected by the opening-up of CEE countries (part 4). This leads to preliminary conclusions regarding our hypotheses. However, the main part of this study is based on micro data (part 5). In the analysis of internationalization patterns, the possible relationship between decline and expansion in the various regions (part 5.1 and 5.2) is explored, both in general and differentiated by overall growth performance. Part 6 concludes.

2. HYPOTHESIS AND RELATED LITERATURE

Our basic hypothesis is that the surge of German FDI in CEE countries is not always additional to prior FDI. To some extent it is rather at the cost of former FDI in traditional relocation countries. As was said above, FDI diversion can take place in different intensity. Diversion in a narrow sense would mean that expansion in the East actually causes disinvestment in losing locations. This could be called “cross-relocation”. It can be expected especially in the case of cost-motivated FDI.

In the case of market-oriented FDI we would, however, not necessarily expect disinvestment in the region losing in relative terms. There can, however, be diversion in a wider sense when growth of FDI takes place in CEE instead of less dynamic markets. A differentiation between FDI diversion in a wider sense and normal structural change of FDI can be made on the basis of the definition of a “normal” level of FDI. Opposing deviation from the normal level in two regions could then be interpreted as diversion in wide sense which or may not go along with absolute reduction in the losing region.

Studies on FDI diversion mostly deal with diversion in a wider sense. This is essentially done by comparing level and development of FDI in (potentially) competing regions. Both a simple comparison of FDI values (UNCTAD 2005) and more refined calculations (Buch et al. 2001) arrive at the conclusion that there is not much diversion to be uncovered. Buch et al. (2001) employ a gravity-type model comprising various theoretically relevant determinants of FDI flows and present, county by country, deviations from a level that could be called “normal”. However, the magnitude of these deviations in many cases gives rise to some doubt. Also, the definition of the dependent variable (FDI flows) seems to be a critical issue. In a similar study with a slightly different definition of the independent variables and foreign production instead of FDI flows as dependent, Borrmann et al. (2005) also show that FDI in CEE countries has reached above-“normal” level already, whereas the southern periphery fell behind in relative terms. However, they also stress the limited explanatory power of such calcu-

lations because of extremely high confidence intervals and because of non-consideration of expectations as an FDI determinant.

Our main interest is in FDI diversion in a narrow sense (i.e. expansion in one region and disinvestment in a competing region) since this is more directly felt in the losing region. Although it is of particular relevance for economic policy, it is rarely studied. There are two approaches used by researchers. In the first approach aggregated FDI development in one region is regressed on FDI in another region. An example of this approach is the study of *Chantasawat et al. (2003)* who do this exercise for China and its neighboring countries.² The second approach is to use micro data which bring us closer to the substitution issue because expansion and decline can be traced for individual investors or groups of investors. Braconier and Ekholm (2001) use Swedish micro data in their study on FDI diversion from Southern to Eastern Europe. They find significant differences in the FDI behavior of firms that had operations in the East and those that had not. The former are more sensitive towards wage differentials in their regional expansion pattern than the latter.

In the test of our hypothesis, we follow these two approaches. We look at relocation processes both from the perspective of the winning and the losing countries. This means we ask two questions: (1) Does expansion in the East go along with disinvestment in traditional locations? (2) Can FDI reduction in the losing region be traced to expansion in the East? Our analysis is largely based on micro data, aggregated to our needs. However, we start with putting FDI in CEE in the context of the general regional trends of foreign operations of German firms. This should point out the relevance of our topic.

3. POSITION OF CEE AS HOST TO GERMAN FDI

As expected, the opening-up of CEE had substantial influence on the regional pattern of new German FDI in the 1990s. Employment growth in these affiliates outpaced that of most other regions between 1996 and 2001 (fig. 3.1). The same holds, although to a lesser degree, for foreign affiliates' production (fig. 3.2; Borrmann/Jungnickel/ Keller 2004). As to the traditional host regions, especially the Western European periphery and the Mediterranean as well as developing regions other than China and India fell far behind.

High growth rates in CEE do not only result from the low basis of the mid 1990s. Bundesbank figures show that as much as 25% of all employment growth in German-owned affiliates between 1996 and 2001 took place in CEE. Due to backwardness in productivity of the often labour-intensive production, the share in production growth is clearly lower. It is behind the

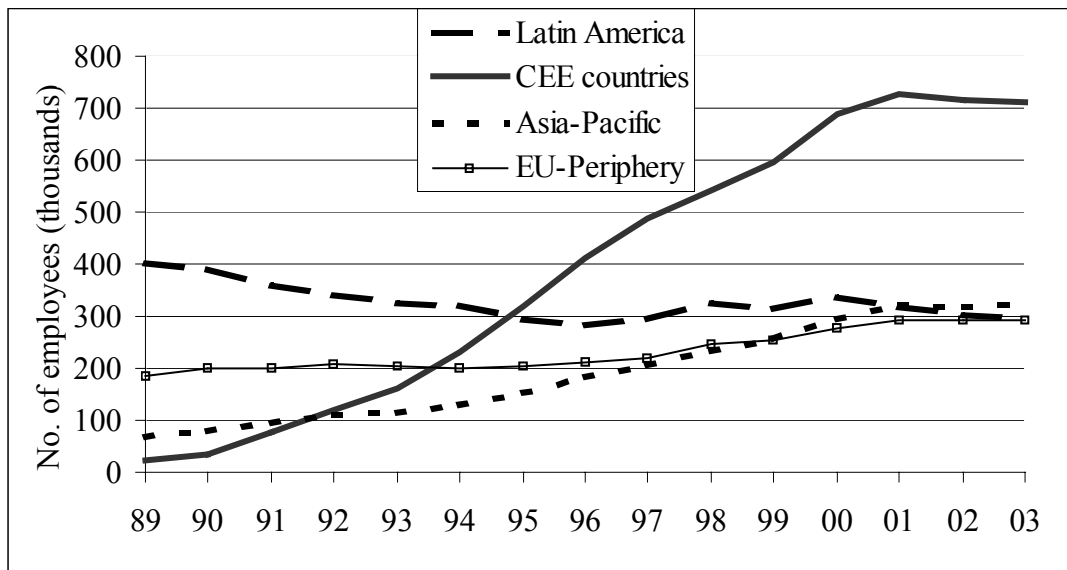
² On this topic, and for more literature cf. also Weiss (2003).

North American and the Core EU share (fig. 3.2). However, with 6% of all German production abroad and almost 16% of all foreign employment, the CEE countries are no longer marginal production locations for German investors.⁴ They dramatically caught up during the late 1990s, starting from 3% and 12% respectively of foreign production and employment in 1996.⁵ Manufacturing production of German affiliates in core CEEC has reached the magnitude of bilateral trade relations.

4 Other forms of engagement, such as processing with co-operation partners or imports from unrelated third parties in CEE are not considered here.

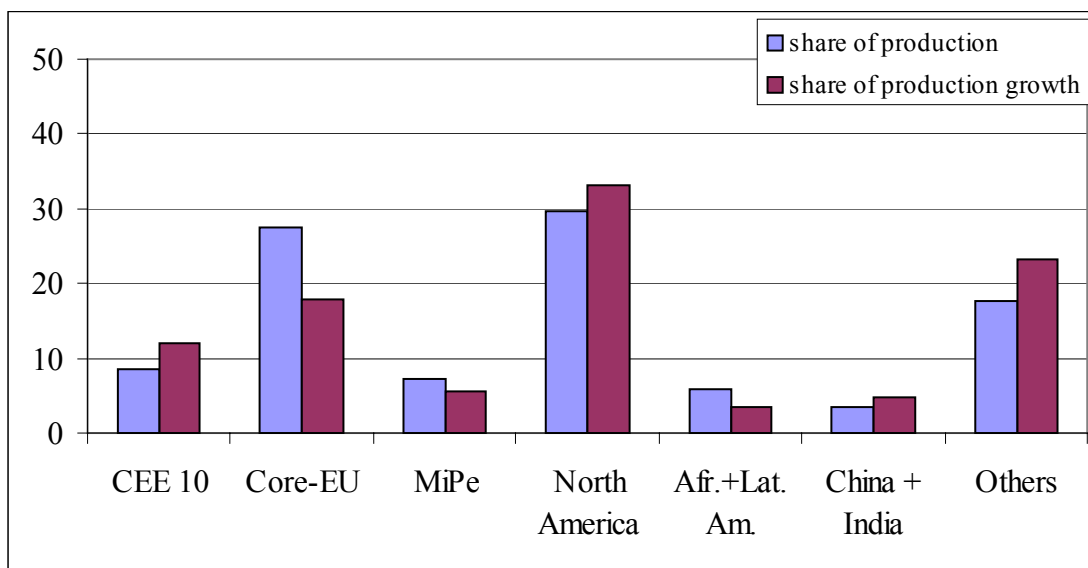
5 China and India, in comparison, are further behind in their catching-up process with only 3% of German overseas production.

Fig. 3.1 Growth of workforce in German CEE affiliates compared with affiliates in other regions, 1989-2003



Source: Own calculations, based on Bundesbank data

Fig 3.2: Share of CEE affiliates in total foreign production 2003 and production growth^a of German firms 1996-2003 (all industries, excl. trade)



a Production growth in the various regions as percentage of total foreign production growth.
 Core EU: France; Belgium, Netherlands, Luxemburg, Italy, UK, Ireland, Denmark
 MiPe: Greece, Portugal, Spain, Tunisia, Algeria, Morocco
 CEEC10: Baltic States, Poland, Czech Rep., Slovakia, Hungary, Slovenia, Bulgaria, Romania
 Source: Own calculations based on Bundesbank data

A comparison of “German” production in CEEC and other country groups supports, on the one hand, the view that there could have been FDI diversion from Western locations to the East. However, contrary to our expectations, the decline in the Core EU is much bigger than in MIPE that is mostly thought to be the main traditional host to cost-motivated relocation.

Furthermore, fig. 3.2 shows that the gains of CEE(10) are much smaller than the losses in the Core EU and that other regions gained as well. Therefore, the data displayed do not allow straight conclusions regarding “cross relocations”. More detailed analyses are necessary.

The individual CEE countries profited to a very different degree from their opening up for foreign investors. German investors have heavily concentrated their activities on the four core CEE countries Poland, Czech Republic, Slovakia, Hungary with almost 90% of the employment and even 94% of the sales of all CEE affiliates. Even when the size of the host economies is taken into account, both employment and production are disproportionately located there. This also holds in a comparison with Western host countries, while most other accession countries are still far behind. The dominance of core CEE has only slightly decreased in recent years. The persistent concentration on this region justifies to focus our analysis accordingly.

In our context, it seems to be noteworthy that CEE obviously displayed special attraction to smaller foreign investors who often started their foreign operations in this region. They particularly profited from lowered transaction costs by proximity and stability of investment conditions in the course of EU accession. By grouping the Bundesbank’s micro data by the extent of foreign operations of individual investors, it can be seen that firms with less than 250 employees abroad have allocated over 30 % of their employees in CEE(10), compared with only 10 % in the case of firms with over 25 000 employees abroad (Annex figure A 2). It seems, therefore, that the opening-up of CEE led to the emergence of new investors that had hardly invested abroad before.

4. DATA BASE AND METHODOLOGY

Our analysis is based on the Bundesbank micro data set which was aggregated to our needs. The Bundesbank generously made available of these data for use in its premises at Frankfurt, with strict protection of identity of the reporting firms. The use of micro data has at least two advantages: First, it enables us to take into account gross development of foreign investment and disinvestment. By doing so, substitution processes and dynamics of FDI can much better be understood and analysed than by looking at the net changes shown in the FDI statistics. Net data could even show a misleading picture of regional FDI trends.⁶ Second, on the basis of micro data we can establish firm-specific, and firm-type specific relationship of changes in production operations in different host regions. Causal relationships between expansion at one

⁶ The potential relevance of this factor is clearly visible in the FDI flows as published in the BOP statistics of the Deutsche Bundesbank (2004b). From 1999 to 2003, liquidations of nominal capital and disinvestment resulting from loans taken up by the German parent from foreign subsidiaries (€ 405 bill.) was equivalent to two thirds of new outward FDI (€ 614 bill.), leaving net outward FDI at a mere one third of gross FDI.

location and decline at another can then better be identified. The Bundesbank data base contains respective information on employment and production (proxied by sales value) of individual affiliates assigned to individual investing firms.

Bundesbank micro data set

Bundesbank data enable us to trace foreign operations of individual foreign investors over time from 1996 up to 2003. Micro data are also available before 1996, but not over time for identical firms. Since there were significant changes in the statistical coverage of FDI as of 2002, we essentially end our analysis in the year 2001.⁷ We exclude those investors which formally began foreign production operations only after 1996 or exited from the statistics before 2001. This is done because entry into and exit from the statistics often is a result of re-organisation of firms rather than “real” entry and exit -- for details see below.

The focus of our analysis is on production operations abroad. Manufacturing industries are therefore defined by the activity of the foreign affiliates as opposed to the activity of the investing firm. Thereby we avoid the inclusion of trading companies/distribution outlets which are less interesting with regard to international mobility of production. On the other hand we include manufacturing affiliates of non-manufacturing investors (for example holding companies). In order to exclude non-manufacturing affiliates as far as possible, we employ a threshold of 500 000 € sales per employee from which on affiliates are excluded from further analysis. By the same token, mini foreign investors with less than 10 employees in both reference years, 1996 and 2001, are excluded. Besides manufacturing affiliates we include affiliates from the financial sector and business services.

The analysis of FDI is done on the basis of foreign *employment* and foreign *production*.⁸ These performance indicators of foreign affiliates are superior to the indicator FDI capital as they are not distorted by financing strategies of the investing firms which have an important influence on FDI values. For example, local borrowing of affiliates increases the capital available but it is not counted as FDI and short term intra-firm credit relations which are induced by tax and interest rate differentials as well as by financing strategies can substantially distort FDI statistics. Employment and production data (production defined as sales value of the affiliates) can better be compared with domestic economic activity and thus give an immediate impression of the scale of production operations abroad.

⁷ As of 2002 the threshold for reporting of FDI was increased from 0.5 mio. € to 3 mio. € in total assets. As a consequence, a large number of investors dropped out of the statistics and FDI as well as foreign employment and production fell in absolute terms. For details see Deutsche Bundesbank: Kapitalverflechtung mit dem Ausland, Statistische Sonderveröffentlichung Nr. 10, Mai 2004, p. 5.

⁸ The term FDI is used here as shorthand for foreign employment and production. FDI in its real sense is labelled “FDI capital”. What we call foreign production is defined as sales value of the affiliates. Since we exclude trading affiliates, the sales value should be a good proxy of production.

For our analysis we constructed a data set of foreign employment and production of German firms aggregated from micro data for individual host countries. Host countries are grouped in regions of relevance for our research question.⁹ Details are shown in Box 1.

Box 1 Grouping of host countries

1. KEU: Core EU (EU exc. Periphery)
2. PEU: EU periphery (Ireland, Portugal, Spain, Greece)
3. Non-EU Mediterranean (Morocco, Algeria, Tunisia, Libya, Egypt, Lebanon, Turkey, Malta, Cyprus)
4. MIPE = aggregate of 2 and 3
5. CEE(4): Core CEE countries (Poland, Czech Republic, Slovakia, Hungary --
6. CEE(5-10): Other CEE accession countries (Estonia, Latvia, Lithuania, Slovenia plus Romania and Bulgaria)
7. CEE (10) = aggregate of 5 and 6
8. North America (USA, Canada)
9. China and India
10. Other Developing Countries

On the basis of this aggregate data, we receive first indications of the relationship between growth of operations in CEE countries and the development in other regions. However, there remain doubts concerning causality of any relationship established. In order to deal with this issue and get more insights into FDI diversion, we move to the micro level and run regressions putting growth of operations of individual firms in CEE in relation with changes elsewhere.

We then extend the analysis of growth and relocation of foreign operations by grouping investing firms with a certain employment performance in one region (CEE countries) by their performance in another region potentially affected by FDI diversion. This enables us to better assess causality of structural changes of FDI and the dynamics of these processes, although it is not without problems.

According to these data, reduction of employment with existing affiliates¹⁰ from 1996 to 2001 adds up to a total of 1.4 mill., over 460 000 of which were in core EU countries. Expansion of employment added up to a total of 2.4 mill. persons, 640 000 of which were in core EU countries. This compares with a stock of employment in 1996 of 2.5 mill. in all regions

⁹ True, growth or re-allocation of existing investment takes place between individual countries. However, the countries affected by growth and decline differ by firms. Therefore, a grouping seems to be appropriate.

¹⁰ All sectors except trade and a number of service industries, as outlined above.

and 750 000 in core EU countries. In some regions (EU periphery, North America) and sectors (TCG and car industry) the aggregated number of employment reduction came close to the stock of employees in 1996 which would mean a complete turnover of respective FDI in the period under review. This is obviously unrealistic. Both entry of new investors and exit of existing ones are heavily overstated in the statistics.¹¹

This problem can be tackled by assigning the affiliates to the ultimate owner of each investor, irrespective of re-organisation. Unfortunately, this information is not yet made available in the data set. Another way would be to match the Bundesbank's investor data with commercial data bases on capital linkages in the German economy.¹² However, this was not (yet) possible.

“Panel Investors”

In the following, we use an easier-to-apply method which gives us a sufficient data base. We restrict our analysis to those investors included in the statistics in both 1996 and 2001. This leaves us with 2561 “panel investors” having foreign operations (excluding trading affiliates) in any region in both 1996 and 2001. The data set inevitably cannot cover information on investors that not only formally but in reality terminate or start their foreign operations between 1996 and 2001. However, our procedure includes most likely the bulk of cases of interest to us. Even entries to and exits from individual regions are included if the respective investors have international operations elsewhere.

In order to harmonize the sample and exclude outliers, we employ a threshold of 500 000 Euro sales per employee from which on investors are excluded. Furthermore, we exclude those investors employing less than 10 persons in producing affiliates abroad. This selection leaves us with a total of foreign employment of 3.3 million, compared with 4.7 million as published in the official statistics.

If defined in the broadest way (all sectors excluding trade and some service industries), the panel firms employed a workforce of over 2.3 mill. in their foreign affiliates in 2001, about two thirds of total employment abroad as shown in the published Bundesbank statistics, down from over 80 % in 1996. Foreign employment of these firms increased by 16 % since 1996, compared with a 46 % increase in total foreign employment of all German firms. This differ-

¹¹ Both entry and exit are to a large extent a statistical artefact resulting from organisational changes within the investing firms. When ownership of foreign affiliates is transferred intra-company, for example to a newly created holding company, this will statistically often result in exit of the existing investor and its affiliates. On the other hand, the holding will enter the statistics as new investor with the same affiliates, although no real changes took place.

¹² It is planned to do this in a later phase of the project, although our experience with similar matching activities is not very encouraging.

ence underlines the substantial weight of new investors, both formal (resulting from re-organization) and real, in German FDI.

The regional structure of foreign employment and production of the panel firms closely corresponds to that of all German FDI in the sector aggregation employed here. They can therefore be considered representative for total German FDI. It is interesting to note that more than two thirds of all panel firms had no operations in CEE which to some extent puts the popular view of an exodus of jobs to the East into a different perspective. Those firms with production operations in CEE almost doubled their workforce in the region between 1996 and 2001 when they employed slightly over 400 000 persons. Their share in all German-owned productive operations in CEE accounted for about 60 % in 2001. The remaining 40% were employed with CEE affiliates of firms that entered or left the FDI statistics between 1996 and 2001.

Proceeding

On the basis of this “panel” data set we first run regressions of employment changes in Eastern and Western host regions with individual firms as observations. There, we use some groupings of the investors involved in order to approach our research question from various angles. For these regressions we use a slightly larger sample than the panel firms, as described above. Mini SME are included which brings the number of investors to 2561 instead of 2428.

In a second, and more interesting, step we look into the dynamics of FDI changes. This is done by grouping the panel firms investing abroad by their employment performance in CEE countries and in traditional relocation regions (EU periphery and Mediterranean, aggregated as MIPE, as well as Core EU). Systematic differences between these groups are checked with a Kruskal-Wallis test, for example between firms expanding in the East and those that do not so. Furthermore, as the data disaggregated by investor and affiliate opens up the possibility to picture a detailed regional pattern of growth and decline, we are able to point at problems involved with generalising judgements on implications of FDI.

5. FDI DIVERSION FROM SOUTH TO EAST?

5.1 Regressing growth and decline

In a first step, we regress the development of operations in the East from 1996 to 2001 with the same firms’ development in the other regions as defined above. In our search for indications, or contra-indications, of FDI diversion we focus on the relation of CEE countries and those regions which can primarily be considered competing for investment and jobs, i.e. EU

(both core and periphery) and Mediterranean countries¹³ as well as China/India and developing countries. North America is included as well since there could be some substitution because of limited resources of the investing firm.

Employment or production changes in absolute terms in the various regions are influenced by the level of total foreign operations which can be considered an indicator of the potential for employment change in the regions concerned. In order to avoid this bias, we include the total level of foreign operations as control variable.¹⁴ Regressions are run for all firms included in the sample and separately for sub-samples grouped according to the growth of foreign employment in the respective region.

In order to exclude temporary short term developments and give room for time to adjust we consider changes in foreign employment from 1996 to 2001 instead of considering annual changes.

Our basic regression equation for dealing with employment changes in the EU periphery and Mediterranean countries (MIPE) therefore reads:

$$\Delta B_MIPE = \beta_0 + \beta_1 \Delta B_CEE(10) + \beta_2 \Delta B_Core-EU + \beta_3 \Delta B_Dev.Countries + \beta_4 \Delta B_China/India + \beta_5 \Delta B_North America + \beta_6 B_total Foreign .$$

ΔB : Change of employment with German affiliates in a region between 1996 and 2001¹⁵

$B_total Foreign$: Level of all foreign affiliates' workforce.

In order to more specifically focus on realistic substitution processes, we, in addition to general regressions, consider firms with increasing employment in CEE and decreasing employment in the Core EU and MIPE separately. Thereby we take into account heterogeneity of foreign investors that has become an important issue in both FDI theory and empirical analysis. Taking account of it, brings us closer to our research question what the effects of surging FDI in the East are.

The results of our regressions are displayed in tables 5.1.1 and 5.1.2. They are in line with our conclusions from part 4 with regard to MIPE (the aggregate of EU periphery and Mediterranean countries) which is clearly dominated by affiliates in Southern European EU countries:

¹³ Mediterranean countries are consolidated with the EU periphery. The aggregate is labelled MIPE, as mentioned in box 1.

¹⁴ Taking the growth of total foreign employment instead does not lead to significantly different results..

¹⁵ In addition we took changes of foreign production instead of employment (not reported here).

- The bilateral relation as shown in model I is clearly positive which is contrary to our hypothesis and contrary to what Braconier/Ekholm (2001) found for Swedish FDI. The sign changes into a less significant negative one if we only consider those (237) firms that reduce their employees in MIPE (specification II).
- When employment changes in more regions are added as explanatory variables for changes in MIPE employment (specification III, 2561 cases), a significantly negative relation of CEE(10) and MIPE emerges which is more in line with our expectations concerning FDI diversion.
- The negative relationship of affiliates in MIPE on the one hand and CEE(10) and core EU on the other is confirmed when only MIPE affiliates with employment cutback are considered (specification IV).
- Results for manufacturing affiliates are in accordance with the ones for all affiliates both when all 1856 cases are considered and when we select those with reduced employment in MIPE (specifications V and VI).

Concerning the relationship of FDI in CEE(10) and in the Core EU, we had no clear-cut hypothesis since the core EU cannot be considered the typical relocation region. Results are quite different from the ones obtained for MIPE:

- The bilateral relation of changes in core EU and CEE(10) displayed in model I indicates that there is a complementary rather than a substitutive relation between affiliates in the two regions. Expansion in the East on average goes along with expansion in the core EU.
- Regression II also displays a significantly positive correlation of employment changes in core EU with changes in CEE(10) but a negative one with the EU periphery and the Mediterranean (MIPE). This result remains largely unchanged when North America, developing countries as well as China and India are additionally considered since there could also be substitutive relations (regression III).
- When we consider only those (637) cases where employment in the core EU actually decreased (specification IV), the sign of the MIPE coefficient accordingly changes into the positive. The coefficient for CEE(10) becomes insignificant which confirms that the positive sign in regressions I through III largely stems from firms expanding in both regions.
- In specification V we look at the core EU-CEE(10) relation from a CEE perspective and ask whether the expansion in the East (622 cases) goes along with specific changes in the West. The results are in accordance with regressions I and II: Affiliates in core EU have also expanded whereas MIPE affiliates have cut employment.

Tables 5.1.1 and 5.1.2 about here

From these regressions, one could conclude that there are some indications of a substitutive relation between CEE countries and MIPE while there rather is a complementary relation to the core EU. Furthermore, there are some indications of a substitutive relation of Core EU and MIPE. Further groupings of the investing firms could probably lead to interesting differentiation.

5.2 Structural analysis of growth and decline

In the following, we aim at analysing the structure behind the average relationships presented in the foregoing. As German operations in CEE are dominated by affiliates in the core countries CEE(4) we restrict our analysis to this region. By differentiating between firms expanding in the East and those reducing employment there, we can better focus on our central diversion issue.

When analysing the expansion in CEE and its implications for competing locations, for example in the EU core and periphery (see tables 5.2.), it is important to note that interrelations between the FDI development in these regions will not necessarily be the same for each investor. Some firms may reduce operations in the North African countries while others may do so in Portugal or in the core EU or do not reduce workforce in other regions at all. Firms investing abroad follow heterogeneous regional strategies.

We therefore proceed pair-wise in our analysis by selecting all investing firms with expanding operations in CEE(4) and then ask what the development in other regions was. Similarly, we select firms with decreasing operations in CEE(4)²² and discuss the development in other regions. By comparing changes in both regions from 1996 to 2001 it should be possible to arrive at an assessment of FDI diversion and other links between operations in the various regions. The significance of differences in the employment performance of the groups com-

¹⁶ The potential relevance of this factor is clearly visible in the FDI flows as published in the BOP statistics of the Deutsche Bundesbank (2004b). From 1999 to 2003, liquidations of nominal capital and disinvestment resulting from loans taken up by the German parent from foreign subsidiaries (€ 405 bill.) was equivalent to two thirds of new outward FDI (€ 614 bill.), leaving net outward FDI at a mere one third of gross FDI.

¹⁷ All sectors except trade and a number of service industries, as outlined above.

¹⁸ The restriction to other *resident* enterprise leaves open the question to what extent German companies investing abroad are controlled by *foreign* firms. In view of the large share of acquisitions, such cases could reach a significant order of magnitude.

¹⁹ It is planned to do this in a later phase of the project, although our experience with similar matching activities is not very encouraging.

²⁰ Even then problems would remain by multiple ownership, and the interpretation would be uncertain since the degree of autonomy of investors controlled by other German firms would be unknown.

²¹ When the time period is restricted to 2001, the last year the Bundesbank employed a wider statistical concept in the FDI statistics, the number of cases increases by over 15 %.

²² Affiliates with unchanged workforce virtually play no important role. The label “declining employment” therefore is large identical with “non-expansion”.

pared is checked with the Kruskal-Wallis test. Again, we do this exercise on the basis of employment data.²³

CEE (4) and EU-Periphery (MIPE)

The MIPE countries consisting of the EU periphery and Mediterranean countries can be considered competing with CEE not least for wage cost intensive production. About one fourth of the panel firms had production units in the region in at least one of the two years. The workforce increased from 175 000 to 200 000 persons. There was substantial dynamism behind this development with decline of over 40 000 and growth of over 70 000 jobs between 1996 and 2001.

Table 5.2.1 gives no support to our hypothesis and the results of the regressions, and they are also conflicting with the results of Braconier/Ekholm (2001): Those 178 investors expanding in the East did not cut down the workforce in MIPE, but instead they expanded by over 30%. On the other hand, those 47 firms downsizing their workforce in CEE(4) also cut their workforce in MIPE. This means: Differences in the employment performance in supposedly competing regions seem to depend on firm specifics rather than on location specifics. The differences between expanding and not expanding investors in CEE(4) are highly significant, according to the Kruskal-Wallis test.

This is not so in the case of SME investors (tab. 5.2.2). Those 58 investors expanding in CEE(4) partly increase and partly decrease their workforce in MIPE so that they end up with a stable 4 000 jobs. Their distribution in terms of employment performance in MIPE does not significantly differ from the performance of firms cutting jobs.

Likewise, when we consider those 1400 investors expanding their workforce abroad by over 5%, there is no significant difference between those expanding in the East (142 firms) and those that have operations there, but do cut their workforce (14 cases). However, it is remarkable that investors without operations in CEE(4) display the strongest build-up in MIPE.

CEE (4) and Core EU

The 1400 firms included in the sample with production operations in the Core EU increased their workforce by almost 25% which roughly corresponds to the average development in that region. The data in table 5.2.1 clearly reject the diversion thesis: Those 308 firms expanding in the East showed far-above-average employment growth in the EU, too. Their distribution in terms of employment performance in the Core EU is significantly different from the distribution of those 91 firms with decreasing employment. However, even the investors expanding in the East displayed widely diverging developments in the Core EU: One third of them cut

²³ An extension will be based on production data defined as sales of manufacturing affiliates.

their workforce, on average, by almost half, while about 60% of them increased the jobs from 96 000 to over 250 000. This strong heterogeneity casts doubt on generalizations that often prevail in the discussion of internationalization processes.

The information contained in table 5.2.2 on SME investors, also reveals strong complementarity of employment in Eastern and Western affiliates. On the other hand, in the case of the expanding investors on a worldwide scale, the employment performance in the Core EU is not significantly different for the 255 firms expanding in CEE(4) and those few (20) that do not expand in CEE(4).

All in all, indications of FDI diversion is less clear than one could have thought from theoretical reasoning. Likewise, the evidence presented in the foregoing is quite different from the one available for Swedish firms.

Tab. 5.2**5.2.1 Change in German affiliates' employment in Core EU and MIPE countries by investors' performance in CEE(4), 1996-2001 – all investors^a**

Investors' workforce in CEE (4)....	Change of employment with affiliates in.....								
MIPE		Core EU			...CEE(4)		
	1000	(%)	No. of investors	1000	(%)	No. of investors	1000	(%)	No. of investors
...expanding	+20.9	(+31.6)	178	+105.3	(+ 50.3)	308	+157.0	(+108)	563
...declining	-10.9	(-34.8)	47	- 45.0	(- 44.5)	91	- 59.8	(-49.8)	181
No production in CEE	+20.3	+26..5)	425	- 29.2	(- 12.4)	949	-----	-----	-----
Kruskal-Wallis	0.0003***			0.0001***					

5.2.2 Change in German affiliates' employment in Core EU and MIPE countries by investors' performance in CEE(4), 1996-2001 – SME investors^a

Investors' workforce in CEE (4)....	Change of employment with affiliates in.....								
MIPE		Core EU			...CEE(4)		
	1000	(%)	No. of investors	1000	(%)	No. of investors	1000	(%)	No. of investors
...expanding	+ .00	(.....)	58	+ 1.1	(+ 11.0)	135	+ 28.7	(+144.6)	343
...declining	- 0.9	(- 48.0)	17	- 3.3	(- 44.3)	48	- 22.3	(- 70.1)	127
No production in CEE	- 0.9	(- 2.7)	323	- 11.9	(- 13.4)	829	-----	-----	-----
Kruskal-Wallis	0.565			0.003***					

5.2.3 Change in German affiliates' employment in Core EU and MIPE countries by investors' performance in CEE(4), 1996-2001 – expanding firms^a

Investors' workforce in CEE (4)....	Change of employment with affiliates in.....								
MIPE		Core EU			...CEE(4)		
	1000	(%)	No. of investors	1000	(%)	No. of investors	1000	(%)	No. of investors
...expanding	+ 25.1	(+ 46.2)	142	+ 131.7	(+ 105.6)	255	+ 124.6	(+ 357.4)	
...declining	+ 0.6	(+ 43.1)	14	+ 8.7	(+ 108)	20	- 8.2	(- 34.0)	
No production in CEE	+ 34.3	(+ 98.5)	233	+ 60.5	(+ 116.7)	533	-----	-----	-----
Kruskal-Wallis	0.116			0.29					

a investors in manufacturing, financial sector and business services that reported FDI in 1996 and 2001

b Countries included, see box 1

Source: Own calculations based on Bundesbank data

6 Conclusions and research perspectives

The opening-up of new FDI opportunities in CEE countries has significantly changed the regional structure of foreign operations of German (as well as other countries') firms. Growth of workforce and production of affiliates in these regions became an important element in the internationalization process, while EU and Mediterranean locations fell behind in relative terms, often even in absolute terms. Our paper discusses the dynamics of this process. We analyze to what extent the expansion in CEE countries goes along with FDI diversion from traditional host regions in the West. We find some evidence of FDI diversion especially from the EU periphery and Mediterranean (MIPE) to the East. However, in general expansion in CEE countries goes along with expansion elsewhere or it takes place independently from the development in other regions.

A breakdown of the data by investors following similar regional investment strategies (expanding vs. reduced workforce) reveals a fundamentally different development compared with Swedish FDI in the 1990s. Obviously, expansion in the East mostly goes along with expansion elsewhere. There is considerable dynamism behind average changes. Furthermore, our disaggregated data reveal great heterogeneity among foreign investors and consequently points out problems involved with generalisation..

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Table 5.2.1 Changes in German employment^a in Core EU regressed with changes in other regions^b

regression	I	II	III	IV	V
selections	no trade prod. < 500 pan. 96, 01	no trade prod. < 500 pan. 96, 01	no trade prod. < 500 pan. 96, 01	dependent < 0 no trade prod. < 500 panel 96, 01	Dependent > 0 no trade prod. < 500 pan. 96, 01
dependent Var.	Core EU	Core EU	Core EU	Core EU	CEE(10)
independent variables:					
constant	9,781 (1,17)	-26,81 (-1,04)	-15,64 (-0,67)	-101,73 (1,49)	155,48*** (3,29)
CEE(10)	0,056*** (2,81)	0,578*** (16,50)	0,387*** (11,61)	0,09 (0,75)	-
Core EU	-	-	-	-	0,096*** (3,51)
MIPE	-	-0,186*** (-3,9)	-0,454*** (-9,19)	1,41*** (3,81)	-0,223*** (-3,75)
Developing Countries excl. China and India)	-	-	0,16*** (4,76)	-0,12 (-1,39)	0,233*** (4,38)
China and India	-	-	-0,22*** (-3,58)	0,272 (1,19)	-0,747*** (-8,05)
North America	-	-	0,382** (21,78)	0,236*** (5,85)	-0,073*** (-3,07)
World	0,033*** (15,97)	-0,001 (-0,1)	0,20*** (3,16)	-0,19*** (-10,55)	0,12*** (14,35)
r ² adj.	0,11	0,12	0,30	0,39	0,4
n	2541	2561	2561	637	622

a 1996-2001

b outliers excluded

Source: Own calculations based on Bundesbank data

Table 5.2.2 Changes in German employment^a in EU Periphery and Mediterranean regressed with changes in other regions^b

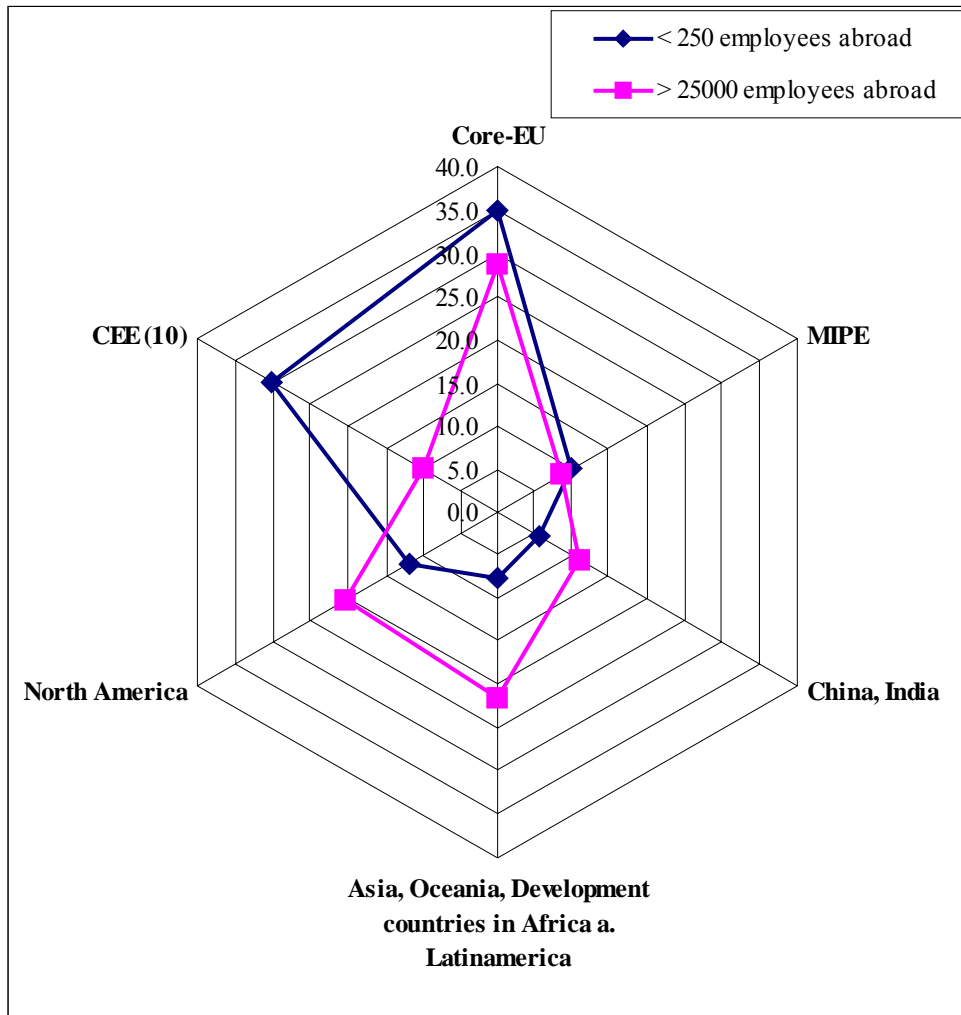
regression	I	II	III	IV	V	VI
selections	dependent < 0		dependent < 0		manufact.	dependent < 0
	no trade	no trade	no trade	no trade	no trade	no trade
	prod. < 500	prod. < 500	prod. < 500	prod. < 500	prod. < 500	prod. < 500
	pan. 96, 01	pan. 96, 01	pan. 96, 01	pan. 96, 01	panel 96, 01	pan. 96, 01
dependent Var.	MIPE	MIPE	MIPE	MIPE	MIPE	MIPE
independent variables:						
constant	2,90 (0,56)	-139,20*** (-4,89)	15,07 (1,64)	-61,99* (-2,06)	19,48* (1,83)	-67,05** (-2,20)
CEE(10)	0,08*** (7,50)	-0,114* (-1,85)	-0,098*** (-7,32)	-0,811*** (-10,34)	-0,32*** (-10,92)	-0,95*** (-8,31)
Core EU	-	-	-0,071*** (-9,19)	-0,095** (-2,42)	-0,14*** (-13,10)	-0,10** (-2,49)
MIPE	-	-	-	-	-	-
Developing Countries excl. China and India)	-	-	0,328*** (28,23)	0,258*** (15,28)	0,31*** (22,79)	0,26*** (11,94)
China and India	-	-	-0,506*** (-22,54)	-0,231*** (-5,95)	-0,48*** (-17,94)	-0,30*** (-7,92)
North America	-	-	0,018** (2,44)	-0,03 (-1,43)	-0,06*** (6,52)	0,01 (0,72)
world	0,006*** (5,55)	-0,020*** (-7,62)	0,01*** (3,95)	-0,052*** (-8,44)	0,009*** (2,81)	-0,04*** (-6,29)
r ² adj.	0,04	0,19	0,34	0,93	0,49	0,96
n	2558	237	2561	238	1856	184

a 1996-2001

b outliers excluded

Source: Own calculations based on Bundesbank data

Fig A 2: Regional structure of foreign workforce of small and big German foreign investors



Source: Deutsche Bundesbank; own calculations