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Ownership, Capital or Outsourcing: What Drives German Investment to Eastern Europe?*

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Abstract

The paper takes a first look at the host and home country effects of German FDI in Eastern Europe (EE) based on new survey data of 1050 investment projects in EE by 420 German multinationals during the 1990s. We find that German investors transfer a substantial amount of financial capital to EE. Furthermore, the most dynamic and innovative segment of the German economy invests in the East which explains why single owned firms dominate as the form of control. We also find strong evidence of vertical FDI suggesting that German corporations are outsourcing a substantial share of their production to EE affiliates to exploit lower wages in the East.

Keywords: capital flows, vertical vs. horizontal FDI, corporate governance, globalization, Eastern Enlargement

JEL Classification: F15, F21, G32, G34

1 Introduction [1]

What does an industrialized country firm (for example a German firm) bring to a developing country (for example Eastern Europe) when it invests in these markets? Is it merely a shift in control from an Eastern European to a German owner or is more involved? What is actually transferred from the rich country to the relatively poor country in a foreign direct investment (FDI) in terms of financial capital, ideas, and production capacity? Is the German firm relocating some economic activity from Germany to Eastern Europe or is it adding new activity in Eastern Europe not undertaken before in Germany? These issues about FDI have become a controversial topic in developed as well as in developing countries. The reason why it matters is that the economic effects of FDI on the home and host country will differ depending on what is actually transferred.

Many developing countries are hostile to incoming foreign direct investment out of the fear of giving too much control to foreign multinationals. The issue of control and foreign ownership has become so central because many developing countries feel that multinationals receive control in their country without benefiting the country's development. As a result some developing countries pursued an active policy of restricting incoming FDI. In Eastern Europe during communism foreign ownership of assets were prohibited. Early observers expressed skepticism of whether or not FDI contributes to the host country's development, since it neither requires capital flows nor investment capacity (see Froot 1993). FDI is often financed in the host country market in which case it does not involve a capital flow. When FDI takes the form of mergers and acquisitions rather than the form of greenfield in-

[1] This paper was written when Dalia Marin visited Harvard University and NBER.

vestment it involves a change in ownership without adding new capacity in the host country.

More recently, the view of FDI has been influenced by the experience with financial crisis in some of the developing countries. Comparing the different types of capital flows to developing countries Bosworth and Collins (1999) and Razin (2001) conclude that FDI has a much stronger positive effect on domestic investment than portfolio investment and it is less volatile than portfolio investment. Furthermore it is boiled down and cannot leave the country as quickly as short term portfolio flows can at the onset of a financial crisis. [2] Krugman (1998), in turn, sees FDI flows to countries experiencing financial crisis as the result of a correction of a domestic distortion ("crony capitalism") brought about by financial crisis. In his view, FDI inflows to a country are a good sign and an expression of things improving in the host country. In contrast, Hausman and Fernandez-Arias (2000) see a large share of FDI inflows in total capital flows to shed a bad sign on a country. A large FDI share in total incoming capital flows to a country is an indicator for poor property rights. FDI relies to a lesser extent on the host country's markets and thus substitutes for inefficient markets and for absent legal and financial institutions in the host country. A similar view is taken by Albuquerque (2000). He finds that the share of FDI in total capital inflows in a country is the larger the riskier the country and the lower the quality of its institutions.

In industrialized countries the views on FDI are by no means less controversial. Many industrialized countries tried to avoid too much foreign presence in what are considered to be "strategic" industries. In recent years there has been a sea change of this view in rich economies. Now FDI is con-

[2]See, however, Hausman and Fernandez-Arias (2000) who are more skeptical about how truly sunken FDI is.

sidered to bring knowledge and ideas to a country which is seen to contribute to a country's growth perspective. Governments have started to engage in tax competition to lure FDI to their countries. The controversy around FDI in rich countries has shifted its focus from incoming to outgoing FDI. The question centers now around whether or not outward FDI to low wage countries has contributed to the increase in the wage gap between skilled and unskilled labor in the US and to an increase in the level of unemployment in Europe. If outward investment in a rich country is just an expression of its firms taking control over assets in another country without a cross-border shift in financial capital and production capacity, then FDI has no effect on income inequality and employment in the rich country. If an outward investment actually involves a shift in production capacity, then the issue is whether the outgoing FDI is mainly vertical or horizontal in nature. In a vertical FDI the rich country firm relocates the labor intensive part of its production to a low wage country and cuts this production stage in the rich skill labor abundant country. Thus, vertical FDI leads to an increase in the wage of skilled relative to unskilled labor in the rich country. In a horizontal FDI the rich country firm produces the same product in its foreign affiliate. Horizontal FDI is driven by market access considerations, while vertical FDI is motivated by differences in factor prices between countries. In contrast to vertical FDI, horizontal FDI has no effect on wage inequality or employment in the rich country. Thus, FDI can generate wage inequality or unemployment in the rich country only when it is vertical in nature.

This paper focuses on two issues based on new survey data of German investment in Eastern Europe. First, we examine what is actually transferred in an investment from Germany to Eastern Europe. Is the skepticism of early observers justified that FDI brings little more than a change in ownership?

Second, we analyze whether German FDI to Eastern Europe is horizontal or vertical in nature. The first issue assesses the effect of FDI on the host country in Eastern Europe, while the second issue relates to the effect of FDI on the home country Germany.

2 German Investment in Eastern Europe

Foreign Direct Investment to Eastern Europe is a new phenomenon. Under central planning foreign ownership of assets was prohibited. During this period the centrally planned economies relied on trade finance like countertrade and turnkey contracts and securitized trade credits as a vehicle for the technology and capital transfer to their economies.[3] After the fall of communism foreign direct investment to transition economies started to rise rapidly especially in Hungary. In 1995, Hungary attracted the largest amount of FDI per capita of any country outside the developed market economies. In the mid 1990s FDI flows surged and began to cover a broader range of transition countries. In the years 1995-1996 FDI in the transition economies accounted for about 13 percent of aggregate FDI outside the developed market economies.

Among the foreign investors in these countries Germany plays a starring role. In the Czech Republic, Hungary, and Croatia Germany accounts for about 30 percent of all incoming foreign direct investment flows in 1999. In Belarus, the Slovak Republic, Poland, and Bosnia and Herzegovina 17 to 25 percent of FDI have originated in Germany. With a share of FDI in total incoming FDI between 8 and 10 percent German investment has also some importance in Romania, Russia, and Ukraine (see Table 1a).

[3]See Marin and Schnitzer (2002) who argue that countertrade is a first-best substitute for foreign direct investment when ownership of assets is prohibited.

Table 1a The Importance of Germany as an Investor for Eastern Europe in 1998 - 1999

country	share (in %) [1]
Central Eastern Europe	**23.71**
Croatia	27.90
Czech Republic	29.60
Hungary	28.00
Poland	17.30
Slovak Republic	22.00
Slovenia	12.30
Baltic States	**4.01**
Estonia	2.50
Latvia	8.40
Lithuania	2.00
Southern Eastern Europe	**n.a.**
Bosnia & Herzegowina	16.90
Bulgaria	8.00
Romania	10.20
Former Soviet Union	**n.a.**
Belarus	25.00
Moldova	6.40
Russia	8.10
Ukraine	8.30

Source: World Investment Report, UNCTAD 2000

[1] of worldwide incoming FDI flows in respective country

On a global scale Eastern Europe is not very important as a host region for German investment relative to other regions in the world. Eastern Europe accounts for 6 percent of all outgoing FDI from Germany. According to the data of the Deutsche Bundesbank Poland is by far the most important host country for German investment in Eastern Europe. Of all German FDI in Eastern Europe Poland gets 41 percent, Hungary 25 percent, the Czech Republic 16 percent, and Russia 7.5 percent (see Table 1b).

Table 1b The Importance of Eastern Europe as Host Country for German FDI

country	German FDI in Eastern Europe reported by the Deutsche Bundesbank (share in %) [1]	sample of 1050 German FDI projects in Eastern Europe	
		frequency in percent of FDI projects	shares in percent of value of FDI flows
Central Eastern Europe	**89.54**	**71.04**	**90,10**
Croatia	n.a.	2.32	19.95
Czech Republic	15.75	22.78	30.47
Hungary	25.25	14.38	17.52
Poland	40.62	23.65	12.19
Slovak Republic	3.46	5.98	9.64
Slovenia	n.a.	1.93	0.32
Baltic States	**0.55**	**5.02**	**0.71**
Estonia	0.1	1.06	0.03
Latvia	0.15	1.64	0.45
Lithuania	0.3	2.32	0.23
Southern-Eastern Europe	**n.a.**	**8.20**	**2.60**
Albania	0.13	0.10	0.00
Bosnia & Herzegovina	n.a.	0.19	0.12
Bulgaria	0.88	2.32	0.95
Macedonia	n.a.	0.10	0.00
Romania	3.45	5.02	1.41
Yugoslavia	n.a.	0.48	0.11
Commonwealth of Independent States	**9.90**	**15.73**	**6.60**
Armenia	0.01	0.10	0.00
Azerbaijan	0.16	0.19	0.08
Belarus	0.12	1.25	0.21
Georgia	0.11	0.19	0.07
Kazachstan	0.79	1.06	0.17
Kyrgyz Republic	-0.10	0.10	0.13
Moldova	0.18	0.58	0.07
Russia	7.42	8.98	3.81
Tajikistan	n.a.	0.1	0.01
Turkmenistan	0.00	0.19	0.01
Ukraine	1.11	2.32	1.95
Uzbekistan	0.10	0.68	0.09

[1] of value of FDI flows for the year 1998

The most important host country in the world for German investment is the United States. More than 50 percent of all outgoing FDI flows move to the US. The European Union gets 30 percent. With 10 percent of outgoing

FDI flows France is the biggest host country of German investment in the European Union. With a share of 6 percent the developing countries are as important as EE as a host region for German investment. Given the proximity of EE to Germany German-East-Integration has by far not yet exploited its full potential (see Table 1c).

Table 1c **Worldwide Distribution of German FDI**

country	share (in %) [1]
Eastern Europe	5.78
European Union	29.8
France	9.25
Italy	3.72
Spain	2.72
Austria	2.66
United Kingdom	2.02
Sweden	1.82
USA	53.23
Japan	0.65
Developing countries	5.62
Rest of the world	4.89

Source: Zahlungbilanzstatistik, Deutsche Bundesbank 2000

[1] of German outgoing FDI flows to respective country in 1998

We conducted a survey among German investors in Eastern Europe. The sample consists of 420 German firms with 1050 investment projects in Eastern Europe (EE) during the period 1989 to 2001. In terms of value the 1050 investment projects represent 62 percent and in terms of the number of investment projects 45 percent of all German FDI taking place in Eastern Europe during this period.[4] The questionnaire of the survey comes in three

[4]These numbers compare our sample with the statistics of the Deutsche Bundesbank.

parts: information on the German parent firm, the investment project, and information on the Eastern European affiliate and its environment. The unit of analysis is the German investment project in Eastern Europe. Thus, a German firm may undertake more than one investment project in EE. In our sample the German investor undertakes on average 2 to 3 investment projects in Eastern Europe. Due to the length of the questionnaire we personally visited the German parent firms to fill in the questionnaire or conducted the interview by phone. Very few questionnaires have been sent out by mail and have been filled out anonymously. The sample is unique in several dimensions. First, it includes detailed information on the German parent firm, like for example balance sheet data, its size, its organization and hierarchical structure, its workers, its global network, the incentive system used for its workers etc. Second, it contains detailed information on how and where the FDI is financed. Third, it includes information on the EE affiliate, which will allows us to relate the German parent firm's performance with that of its affiliate in EE. [5]

The regional distribution of German FDI in Eastern Europe of our sample of 1050 projects given in Table 1b corresponds to the data of the Deutsche Bundesbank in the ranking of countries. Poland, the Czech Republic, Hungary, and Russia are the most important host countries for German investment. The numbers of the first two columns are not quite comparable, however, because the numbers of the Bundesbank are calculated for the value of FDI flows while the data of our sample (in column 2) give the regional distribution as measured by the number of investment projects.

[5] In a companion survey of Austrian FDI in Eastern Europe we are collecting 940 investment projects in Eastern Europe undertaken by 200 firms in the period 1990 to 2001. The Austrian sample represents 100 percent of the statistics of the Austrian Nationalbank. If the German and Austrian data are combined the sample consists of 2000 investment projects undertaken by 620 firms.

3 What Do German Investors Bring to the Host Country in Eastern Europe?

In this section we look at whether German investment benefits the host country in EE. What does the German firm actually move to Eastern Europe in an foreign direct investment in terms of financial capital, technology and ideas, and production capacity? Does FDI bring a change in control over the assets in EE only or are real resources reallocated to EE?

3.1 Is FDI a Capital Flow?

The macro literature on foreign direct investment treats FDI as any other capital flow. FDI is seen as an international capital movement across countries in search for the highest return. FDI is seen to be similar like a portfolio investment with a special form it takes to channel resources from one country to another. The 'cost of capital' explanation of the macro literature has been discredited by the evidence. First, the recent behavior of world capital flows. Portfolio investment and foreign direct investment behave so strikingly different across countries and over time that is hard to reconcile this fact with an explanation that sees both to be driven by a common cause. Second, firms engaging in FDI often finance an important share of the investment locally. Third, about 80 percent of world capital flows and world FDI flows take place between countries which do not differ in their capital costs.[6] This is difficult to account for if differences in the cost of capital are the reason for these flows.

But can a cost-of-capital explanation be fully ruled out? We want to shed new light on the cost-of-capital-approach by looking at the actual financing behavior of German FDI in Eastern Europe. This is done in Table 2. From

[6]See Bourguignon et al (2002) and Lipsey (1999).

the table we see that internal finance is by far the most important form of finance of FDI. 65.4 percent of the projects in Eastern Europe are financed by funds internally generated by the German parent. This share corresponds roughly to the share of cash flow finance of domestic investment of firms in OECD countries.[7] The internal funds made available by the firm to finance the FDI in EE come in 58 percent of the projects from the German firm's cash flow and in 42 percent of the investments projects from redistributed capital from other divisions or subsidiaries of the German conglomerate. Only 9 percent of the FDI projects in EE are financed by external funds. Here the dominant form of finance is bank debt in Germany. 43 percent of all externally financed FDI projects are financed by a loan raised by the German parent firm from a bank located in Germany. 25 percent of the FDI projects with external finance are financed by a local bank in the host country. Equity raised by the German investor in Germany to finance the FDI also plays some role.

In order to asses whether or not FDI represents a capital flow from Germany to Eastern Europe the share of the FDI which is locally financed in EE and that comes from external sources matters.[8] However, bank debt in the host country and equity raised in the host country account for only 27 percent of all externally generated funds to finance FDI. In sum, in more than 70 percent of German FDI taking place in Eastern Europe the German firm transfers financial capital from Germany to EE either by using its own funds or by borrowing from a bank in Germany. Thus, FDI indeed is a financial flow from Germany to Eastern Europe in most cases. A cost of capital approach to explain FDI does seem to be quite appropriate.

[7] See Rajan and Zingales (1995).

[8] If affiliates in EE use retained earnings to finance an expansion of capacity in EE this counts as a capital flow in the balance of payment statistics.

Table 2 **Financing of FDI in Eastern Europe**

type of finance	cases	frequency (in %)
external finance	93	8.86
internal finance	687	65.43
external and internal finance	188	17.90
missing	82	7.81
total	1050	100
external finance		
bank loans in Germany	43	43.43
bank loans in host country	25	25.25
equity raised in Germany	18	18.18
equity raised in host country	2	2.02
public funds	11	11.11
subtotal	99 [1]	100
internal finance		
cash flow	405	57.86
internal capital market	295	42.14
subtotal	700 [2]	100

Source: Sample of 1050 German FDI Projects in Eastern Europe

[1] The figures exceed the 93 cases of external finance of the upper part of the table because of the possibility of multiple responses.

[2] The figures exceed the 687 cases of internal finance of the upper part of the table because of the possibility of multiple responses.

3.2 FDI and the Flows of Ideas

Why might the German firm be willing to pay more for an Eastern European firm than a local firm? One possible reason is that the German firm expects to achieve a larger cash flow than a local firm - that is, the factory might be more profitable in German hands. But why will the factory earn higher returns in German hands? The industrial organization explanation of FDI (Hymer 1976, Dunning 1958) argues that for a firm to overcome the handicaps of

going abroad (different language, unknown market), it must posses internal, firm-specific advantages over local firms. This advantage takes often the form of superior product technology. The reason why a firm with superior technology might want to go abroad producing rather than selling the idea to a local firm is that in the latter case it looses control over its knowledge of the technology. A developing country interested in receiving knowledge spillovers from western firms might want to let FDI in, precisely because when the foreign firm can own the assets in the host country, it will have the right incentives to bring its knowledge to the country. In other words, the foreign firm will want to come into the country by producing under its roof in order to secure itself the economic benefit of the knowledge it created. If this firm would sell its technology to a local firm in a market transaction rather than under its ownership, it is very likely that the firm will sell an inferior technology.[9] A natural question to ask is therefore what type of technology is actually transferred in a FDI. We examine this in Table 3. The German investor herself ranks the technology she has transferred to EE in roughly half of the FDI projects as hard to imitate. This number suggests quite a bit of technology transfer to EE. At the same time, however, the German investor also expressed not to have a leadership in the technology over its competitors in 75 percent of the investment projects. This number includes the investment cases in sectors like services in which technology may have little relevance. Even when taking into account that this number is large due to industry specific effects in which technological competition

[9]The former centrally planned economies (FCPEs) were well aware of the described incentive problem of getting outdated technology from western firms when not offering control and ownership over the assets. Rather than letting foreign ownership in, the FCPEs invented new arrangements like countertrade and turnkey contracts. Marin and Schnitzer (2002) argue that countertrade contracts actually are a first best substitute for FDI in guaranteeing efficient technology transfer.

does not play much of a role, the number does suggest that the German firm does not transfer the most advanced technology to EE in the majority of investment projects. Still, in almost 10 percent of the investment projects it takes competitors more than a year to catch up with the technological advantage of the German firm.

Table 3 Technology Transferred to Eastern Europe [1]

type of technology	cases	frequency (in %)
technology is easy to imitate	342	32.57
technology is hard to imitate	508	48.38
technology cannot be imitated	43	4.10
not applicable	151	14.38
missing	6	0.57
total	1050	100.00
technological advantage over competitor (in months)	cases	frequency (in %)
no technological advantage	784	74.67
1 to 3 months	4	0.38
3 to 6 months	44	4.19
6 to 12 months	72	6.86
more than 12 months	98	9.33
not known	48	4.57
total	1050	100.00

Source: Sample of 1050 German FDI Projects in Eastern Europe

[1] German investor's assessment

Another approach to the same question is to look at the technological characteristics of the German parent firm herself rather than at her assessment of the technology she brings to EE. This is done in Table 4. By looking

at the R&D expenditures in percent of sales of the German parent firm as a measure of innovative activity we find that about 30 percent of the German multinationals have a R&D intensity over 4 percent and 16.5 percent in the range between 1 and 4 percent. The Mannheimer Innovation Panel describes a manufacturing activity in Germany in the period 1993 to 1997 with a R&D ratio of 6.4 percent to belong to the superior technology sector, one with a R&D ratio of 2.8 percent to belong to the high-technology sector, and a manufacturing activity with a R&D ratio of 0.9 percent as belonging to the non-high-technology sector. Given this ranking of innovative activity one can safely conclude that German multinationals engaged in Eastern Europe fall in about 45 percent of the investment projects in sectors ranked as belonging to the superior or high technology sector. The 31 percent share of firms without R&D activity is partly driven by the fact that 35 percent of the investment projects are in services like banking.[10] From this analysis one might conclude that the most innovative firms of the German manufacturing sector are engaged as multinationals in EE, but by their own assessment they do not necessarily transfer the most advanced technologies at their disposal to EE when they invest there. In sum, German foreign direct investment does seem to be an important vehicle of technology spillovers to EE.[11]

[10]For the pattern of specialization of German Investment in EE see Table 7.

[11]Marin and Verdier (2002) offer a model why the most human capital intensive firms will go abroad.

Table 4 R&D Intensity of German Investor

R&D (in % of sales)	cases	frequency (in %)
0.00	198	31.38
0.01 - 1.00	141	22.35
1.01 - 4.00	104	16.48
4.01 - 9.00	127	20.13
> 9.00	61	9.67
positive responses	631	100.00
missing	419	
total	1050	

Source: Sample of 1050 German FDI Projects in Eastern Europe

Next we want to look at how investing firms protect their intellectual property given the fact that the most dynamic and innovative German firms tend to go to Eastern Europe. Table 5 looks at the structure of ownership.[12] The dominant entry mode of German firms in Eastern Europe is the single owned firm with 100 percent of the assets under its control. This appears to be the case in more than 50 percent of the investment projects in EE. If the German investor agrees to joint ownership in a joint venture (19 percent of the investment cases) or to multiple ownership in acquisitions often of privatized firms (24 percent of the investments), she typically insists on having control in the firm with more than 51 percent of the firms' assets under its ownership. Only in 10 percent of the investment projects has the German investor a minority share of below 50 percent of the firms' assets. [13]

[12]For a more detailed analysis of the structure of ownership see Müller et al (2001), Smarzynska (2000) and (2002).

[13]This pattern of ownership is surprisingly similar to the form of control of German firms, in general see Barca and Becht (2002).

Table 5 **The Structure of Ownership**

	cases	frequency (in %)
form of control		
single ownership	589	56.10
multiple ownership	251	23.90
joint venture	197	18.76
missing	13	1.24
all FDI projects	1050	100
ownership shares [1]		
< 50 percent	103	9.81
50 - 51 percent	82	7.81
> 51 percent	255	24.29
100 percent	575	54.76
missing	35	3.33
all FDI projects	1050	100

Source: Sample of 1050 German FDI Projects in Eastern Europe

[1] The shares refer to the sum of the value of the FDI

3.3 FDI and Capacity Building

Does FDI bring additional production capacity to Eastern Europe? This will depend on whether the German investor builds a new factory (greenfield investment) or buys shares in an already existing firm. In the latter case FDI shifts the ownership to the German investor, but no additional capacity is created by the investment. Table 6 looks at the mode of entry to EE by firms worldwide and by German firms. Apparently, the country of origin of the investor does not seem to matter for the choice of entry mode. Firms worldwide and German firms choose the same mode. More than 55 percent of investment flows to EE take the form of greenfield investment and about

40 percent take the form of M&As. The table shows a clear shift away from greenfield investment towards M&As over time. In 1993 82 percent of total FDI to EE were greenfield investments and 18 percent M&As only. This is indeed a drastic change towards a form of investment with less capacity building. Probably the most important reason for this shift are the reforms in privatization taking place during the 1990s in many of the transition countries offering foreign investors the opportunity to buy assets rather than to build a factory from scratch. However, in developing countries there is a similar shift towards M&As, although less pronounced than in EE. What one can conclude from this table (at least at this level of data aggregation) is that host country characteristics and host country policies seem to be more important than the investor's characteristics for which entry mode is chosen.[14]

[14]For a model of the choice of entry mode between greenfield investment and M&As, see Müller (2001).

Table 6 **Mode of Foreign Entry**

	greenfield [1] (in %)	M&A [1] (in %)
Eastern Europe		
by firms worldwide [2]		
1993	82.00	18.00
1995	59.00	41.00
1999	57.00	43.00
by German firms [3]		
1997	56.06	43.94
Developing Countries		
by firms worldwide [2]		
1993	81.00	19.00
1995	84.00	16.00
1999	70.00	30.00

[1] of value of total FDI flows

[2] World Investment Report, UNCTAD 2000

4 Is FDI horizontal or vertical?

In this section we turn to the effect of FDI on the home country. We want to examine whether or not German FDI in EE has the potential to contribute to an increase in inequality or in unemployment in the German economy.

Why do German firms invest in Eastern Europe? Do they want to replicate their production facilities in each of the countries in EE or do they want to exploit differences in factor costs between Germany and Eastern Europe? The former is a horizontal FDI and is primarily motivated to gain access to the host country market. The latter is a vertical FDI and is motivated

by wage differentials.[15] One motivation for distinguishing between these two forms of multinational activity is to identify their potential home market effect on the German economy. If German FDI in EE is horizontal, then no change of relative wages or employment in Germany can be expected, while if it is vertical it does.

We start our analyses by first looking at the pattern of specialization of German investment in EE in table 7. It shows the share of total affiliates activity by SITC sector. German firms invest in EE most often in services (35 percent of the projects), in sectors producing manufactured goods including textiles, clothing and leather (29 percent of the investment projects in EE), and in machinery and transport (22 percent of the investments). Manufactured goods and machinery and transport are the classic sectors in which EE has a comparative advantage.

Table 7 The Pattern of Specialization of German Investment in Eastern Europe

SITC - category		frequency (in %)
0 - 1	food and beverages	5.62
2 - 4	raw materials	4.19
5	chemicals and related products	4.76
6 + 8	manufactured goods	28.86
7	machinery and transport	21.71
services		34.86

Source: Sample of 1050 German FDI Projects in Eastern Europe

Next, we turn to examine what purpose the Eastern European affiliates sales serve. Are the sales of EE affiliates primarily oriented towards selling

[15] For the theory of vertical FDI, see Helpman (1984), Helpman and Krugman (1985), for theories of horizontal FDI, see Markusen and Venables (1998, 2000).

into their host markets or are they mainly exported to the parent company in Germany for further processing or marketing? If FDI is horizontal, affiliate sales stay exclusively in the host country. If FDI is vertical, the EE affiliate sales are exported back to the German parent firm for further processing or marketing as part of a global outsourcing strategy of the German multinational corporation. We use this criterion in Table 8 to distinguish between these two forms of FDI.[16] The second column in Table 8 gives the fraction of exports in total sales of EE affiliates that go to German parent firms by transition country. Across all transition countries, 28 percent of the EE subsidiary's sales is exported to the German parent company. We expect this export ratio to vary with the size of the transition country and with the distance from Germany. Large countries with long distance from Germany are expected to have smaller export ratios than small countries in the proximity of Germany. In large distant countries the German firm can best access this market by producing locally and avoiding transport costs. This is the case for Russia and Ukraine. In these two economies German FDI serves exclusively the host country market. The export-to-sales ratios, on the other hand, of the Slovak Republic and the Baltic States are extremely large (more than 80 and 60 percent, respectively). In Romania and Hungary, in turn, German FDI seems to be horizontal as well as vertical, as roughly one half and one third of its affiliates output is send to the parent company. In Poland and the Czech Republic, on the other hand, horizontal FDI dominates. Their export-to-sales ratios are far below 20.

The first columns of Table 8 gives the fraction of imports in total sales of EE affiliate. Across all transition economies, imports account for about 10

[16]Hanson et al (2001) use this criterion to identify whether US multinational activity is horizontal or vertical. They introduce the term 'affiliates as export platforms' for when US affiliates sell their output on other than the host country market.

percent of affiliate sales. These import ratios give the share of intermediate goods from the German parent company used by affiliate in production. The German multinational in Russia, Romania, and the Slovak Republic brings a substantial fraction of its output from the German headquarter firm. German affiliates in Ukraine and Hungary have negligible import-to-sales ratios and thus seem to exclusively buy their inputs locally.

Table 8 Intra-Firm Trade by Transition Country

	imports [1]	exports [2]
country	**in percent of Eastern European affiliates' sales**	
Baltic States	25.00	64.11
Czech Republic	8.70	17.46
Hungary	4.69	30.79
Poland	9.46	14.44
Romania	29.69	44.11
Russia	28.22	8.42
Slovak Republic	30.69	82.32
Ukraine	2.09	0.69
all transition countries	**10.48**	**27.78**

Source: Sample of 1050 German FDI Projects in Eastern Europe

[1] inputs obtained from German parent firms to Eastern European affiliates

[2] intermediate and final goods delivered by Eastern European affiliates to German parent firms

In Table 9 we look at the export-to-sales ratios of EE affiliates to the German parent company by sector. Exports as a share of sales of EE affiliates are with 46 percent highest in manufactured goods which include textiles, leather, clothing followed by machinery and vehicles (export ratio of

39 percent). These are the sectors in which EE is commonly seen to have a comparative advantage and in which outsourcing makes particular sense.

Table 9 **Intra-Firm Trade by Sector**

SITC - category	imports [1]	exports [2]
	in percent of Eastern European affiliates' sales	
0 - food and live animals	0.42	1.02
1 - beverages and tobacco	0.12	0.43
2 - crude materials, inedible, except fuels	10.20	10.94
3 - mineral fuels, lubricants and related materials	0.44	0.00
5 - chemicals and related products	36.57	13.53
6 - manufactured goods classified chiefly by material	7.40	46.12
7 - machinery and transport	12.36	38.47
8 - miscellaneous manufactured articles	6.75	20.81
services	4.38	16.27
all sectors	**7.69**	**23.23**

Source: Sample of 1050 German FDI Projects in Eastern Europe

[1] inputs obtained from German parent firms to Eastern European affiliates

[2] intermediate and final goods delivered by Eastern European affiliates to German parent firms

5 Conclusion

Foreign Direct Investment (FDI) has become a controversial topic recently. Multinationals from rich countries may not bring much to the developing countries while exerting a fair amount of control. At the same time outgoing FDI flows from rich countries have been viewed to contribute to the rich countries' increase in inequality and unemployment. This paper takes a first look at these host and home country effects of German FDI in Eastern Europe

(EE) based on new survey data of 1050 investment projects in Eastern Europe undertaken by 420 German multinationals during the 1990s.

We find that the host countries in Eastern Europe strongly benefit from German FDI. Typically German investors transfer a substantial amount of financial capital to EE when they invest in these markets. Furthermore, it is the most dynamic and innovative segment of the German economy that invests in the East which explains why these firms want to have control in their Eastern operations. Thus, single own firms with the maximum level of ownership of control dominate. However, these firms often do not bring the most advanced technologies at their disposal to EE. We also find strong evidence of vertical FDI. German corporations are outsourcing a substantial share of their production to Eastern European affiliates to exploit lower wages in the East. This suggests that FDI in EE has the potential to increase unemployment in Germany. However, further research is needed to quantify these labor market effects.

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