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Direct Versus Indirect FDI: Impact On Domestic Exports And Employment

Wilfried Altzinger and Christian Bellak

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Direct Versus Indirect FDI: Impact On Domestic Exports And Employment

by

Wilfried Altzinger and Christian Bellak

Vienna University of Economics and Business Administration (WU)
Augasse 2-6
A-1090, Vienna, Austria

Abstract

One of the specific characteristics of Austrian Foreign Direct Investment (FDI) abroad is that a large part is carried out by firms, which themselves are affiliates of foreign Multinational Enterprises (MNEs). Such investment is termed indirect FDI in order to distinguish it from direct FDI, made by Austrian-owned firms. The objective of this paper is to analyse, whether the relatively better domestic employment performance of domestic firms (direct FDI) compared to foreign-owned firms (indirect FDI) can be linked to FDI abroad. Based on an analysis of the sales and trade structure of a sample of Austrian investors in Central and East European Countries (CEECs), this paper tests the hypothesis that these two groups of investors have different motives to invest in CEECs and therefore their activities in CEECs differ by type (sales affiliate, production abroad) and consequently the employment effects at home. Regression results confirm that direct FDI are more strongly determined by labour costs and exhibit an employment pattern related to a deeper international division of labour (including production), while indirect FDI is based relatively more on market seeking investment. Empirical results also confirm that employment effects at home differ. The positive (negative) effect of one additional unit of parent (affiliate) sales on domestic employment for indirect FDI compared to direct FDI is larger (smaller). The - despite this empirical fact - relatively better domestic employment performance of direct FDI is explained by their superior sales performance, resulting from restructuring their international division of labour.

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Keywords

FDI, Multinational Enterprises, Employment, Industrial Policy here

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F1, F23, L2, L60

Contents:

I. Introduction

A considerable number of MNEs investing in Central and East European Countries (CEECs) channel their foreign direct investment (FDI) through an affiliate (e.g. a regional headquarter) set up in a third country. Such FDI are termed indirect FDI[1] in order to distinguish them from those FDI set up by the parent (headquarter) directly: *FDI by a foreign affiliate is indirect FDI, signifying that the resulting asset-stock is owned by the parent firm via the foreign affiliate, and that it represents, therefore, an indirect flow of FDI from the parent's home country (and a direct flow of FDI from the country in which the affiliate is located)* (UN 1998, p. 145). Since FDI refers to a capital flow or stock, we use "direct FDI" synonymously for Austrian-owned firms and "indirect FDI" for foreign-owned affiliates in Austria.

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Figure 1

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Figure 1 illustrates the term "indirect FDI". Therefore, three different geographical entities are distinguished. In principle, all three should be included in the analysis, since the relation between Austria and the CEECs also depends on the activities of the MNEs in "the rest of the world". Since our focus is on the domestic employment effects this conceptual model can be applied to direct FDI by looking at the relationship between the Austrian parent and its affiliate in the CEECs. For indirect FDI the relationship between the Austrian firm and its affiliates in CEECs is also affected by the activities of the foreign MNE in the "the rest of the world" (dashed arrows in Figure 1). The activities of the parent company and other affiliates of the MNE are the main cause for different trade patterns of direct and indirect FDI.

Stylised facts on Austrian FDI in CEECs show at least three particular structural features with respect to the question of employment and trade effects of FDI which make Austria an ideal country to be studied.

First, Austrian firms have been *early investors*. Austrian FDI in CEECs have reached high levels immediately after 1989. Austria's share in FDI stocks ranges from 3 to 22 per cent in neighbouring CEECs and it is an important location (bridgehead) for regional headquarters responsible for CEECs (cf. Table 1). The large share also stimulated (public) concern about job losses through relocation.

[1] Although at first glance this may seem as a contradiction in terms it is nevertheless very important.

Table 1. Share of Austrian FDI in total FDI of selected CEECs

Share of FDI stocks in %	1990	1997
Czech Republic	1.3	14.7
Slovakia	-	18.2
Hungary	22.0	9.8
Poland	5.4	2.4
Slovenia	13.2	13.8
Croatia	-	11.2
CEECs total	10.3	5.8

Source: Stankovsky, 1999, p. 117.

Second, Austrian investors in CEECs are *only partly Austrian firms*, as Austrian affiliates of foreign MNEs account for a large share of Austria's overall FDI in CEECs. "A great deal of Austria's FDI abroad is in fact carried out by enterprises which are in turn affiliates of foreign investors" (Neudorfer, 1997, p. 56). During the period 1989-91 this type of investment had come to about 40% in CEECs. Despite this share decreased to 26% in 1996, it remains an important part of Austria's overall FDI in CEECs.

Third, during the early investment period (1989-95), direct FDI achieved better outcomes in *employment growth as well as sales growth* of the parent firms in Austria than indirect FDI. This result holds true even for the post-investment period (1995-98). Sales growth of direct FDI has been considerably stronger for both periods. In accordance with sales growth, parent employment of direct FDI has grown considerably stronger than for indirect FDI.

Table 2: Sales and Employment Performance of Direct and Indirect FDI

Type of Firm		Changes of Sales, 1989-95	Changes of Sales, 1995-98	Changes of Parent Employment, 1989-95	Changes of Parent Employment, 1995-98
Direct FDI	Median	33.3	15.4	5.9	.0
	N	67	67	63	65
Indirect FDI	Median	21.0	3.8	-2.0	-10.0
	N	21	21	21	21
Total	Median	33.3	12.4	5.3	-1.3
	N	88	88	84	86

These stylised facts give rise to a number of questions, in particular concerning (labour-)cost related relocations given the large gap of labour cost between "East and West". In particular, we are interested in possible links between the domestic employment performance and FDI in CEECs. The

reorganisation of production triggered off by the opening of Eastern Europe has brought new interest to questions of employment relocation and the impact of FDI on the balance of payments. While the public discussion in home countries is based on fears of workers in marginalised industries and of politicians in regions with high unemployment, evidence on the substitution of jobs by FDI in CEECs is still rare. A separation of the total employment effect of both groups of firms should yield important insights which help to explain the stylised facts presented above on the basis of the underlying *motives* and the *trade structures* that exist between parent and affiliate. Consequently this paper distinguishes between direct and indirect FDI and tests hypotheses concerning the links between domestic employment and job creation abroad.

The paper is organised as follows: First, the existing literature on domestic employment effects of outward FDI is surveyed briefly with respect to motives and trade. Then the data and the methodology are described and the results are presented. The results point to the importance of the distinction of direct and indirect FDI, concerning the sales and trade structure as well as the motives for FDI in explaining different home-country employment effects of the two groups of firms. There is a short concluding section on the micro-economic logic of the aggregated results derived in this paper.

II. Literature Review

The question whether outward FDI substitutes or complements domestic production and consequently jobs, has been the subject of a large number of studies (e.g. Lipsey and Weiss 1981; Lipsey 1994; Graham 1996; Barrell and Pain 1997). Blomström et al. (1997), Agarwal (1996) and Andersen and Hainaut (1998) provide excellent surveys. One way to approach the problem is to derive substitution elasticities (relative wages) between employees in parent firms and their affiliates. Since this road of investigation is not open to us, because of the lack of firm-specific data on wage levels in CEECs by industry, we focus our analysis on *trade relations* between parent firms and affiliates. Trade and FDI are linked in multiple ways (see Gray 1992; Cantwell 1994). According to this strand of argument, the intra-firm trade balance, the geographical distribution of exports and the importance of local sales are important determinants of the demand for labour at home resulting from outward FDI. Most empirical studies, however, lack information about these important indicators. Consequently, the argument here is based on the relationship between the *motives* for FDI and their effect on trade (cf. Agarwal 1996) and on the intra-firm trade relations.

According to established theory, the activities of affiliates can be related to the motives of FDI, namely efficiency seeking, market seeking and strategic-asset seeking. The impact of these types of FDI on trade patterns are explained by distinguishing four kinds of trade linkages between the parent firm and her affiliates: (a) the substitution of former exports through FDI, (b) growing (re-)imports of goods and services produced abroad, (c) FDI associated exports of goods and services and (d) FDI

induced exports of other product lines neither produced by the foreign affiliate nor exported earlier by the parent firm (Agarwal 1996; Altzinger and Winklhofer 1998). The overall impact of FDI on trade (and consequently on domestic employment) is the sum of negative (export substitution, re-imports) and positive effects (associated and induced exports) and can be tested only empirically.

Any distinction between direct and indirect FDI is justified only if their trade linkages differ. This is conceivable, since both types of investors may develop different entry strategies in CEECs, based on their competitive advantage. The specific competence of the Austrian affiliates of foreign MNEs (indirect FDI) within the network of the MNE with respect to CEECs derives from their Austrian market supply and sometimes associated exports to CEECs. The specific competence of Austrian firms (direct FDI) arises from their long-lasting experience in CEEC markets (Bellak 1997, 1998). Empirically, if different trade linkages between parent firms and affiliates exist for direct and indirect FDI, their effect on domestic employment will differ as well. For example Blomström et al. (1997) argue, that rivalry for markets is one of the main reasons for a positive relationship between foreign production and domestic employment (p. 1798), which provides one argument to distinguish market-oriented from efficiency-oriented FDI.

A related question is, whether the trade linkages change from the period of entry into a foreign market and the maturing of the FDI. Several theories suggest that entry occurs first via a sales subsidiary, which may be extended into a production unit later on (e.g. Bergsten et al. 1978). CEECs are newly developed markets and have also been low-cost production locations for ten years, some firms may have switched their operations there over time. These considerations lead to a number of questions, such as: Do direct and indirect FDI follow different trajectories or are such strategies idiosyncratic to firms? Do they result in different trade linkages between parent firms and affiliates for direct and indirect FDI and consequently change the effect on domestic employment? These questions are now analysed empirically.

III. Data

To analyse the impact of foreign affiliates on domestic employment we make use of two different sets of data: The first comprises the results of the annual FDI survey carried out by the Austrian National Bank, covering all firms with an investment above ATS 1 million. This data set provides excellent information about the total amount and structure (geographical, industrial) of investment as well as on employment. However, these data do not provide sufficient information on trade figures. Therefore we use a second data set which presents results of a survey conducted in summer 1997. Among others, this data set includes sales, export and employment data for 1989, 1995 and expected figures for 1998. A simple model which analyses the different impact of parent and affiliate sales on domestic employment is used.

1. Development and Structure of Austrian Direct and Indirect FDI in CEECs

Table 3 shows the main differences of Austrian direct and indirect FDI in CEECs for 1991 and 1996. This period is characterised by the opening up of the CEECs and their economic integration into the European Union. During this period the amount of capital invested has increased fourfold and was ATS bn 39.5 in 1996. Starting from zero in 1989 it accounted for nearly 30% of Austrian total outward FDI stock in 1996. Hence the importance of the CEECs for the internationalisation of Austrian enterprises is clearly discernible. Even the number of investments has increased from 414 to 909. However, this increase is less pronounced than the growth of capital invested.

Table 3: Main Differences of Austrian Direct and Indirect FDI in CEECs, 1991 and 1996

1991	Direct FDI		Indirect FDI		Total FDI
Total Capital Stock (ATS mn)	5314.7	47.1%	5973.416	52.9%	11288.12
Parent Employment	33893	73.4%	12301	26.6%	46193
Affiliate Employment	13437	54.4%	11244	45.6%	24681
Percentage Share of Affiliate / Total Employment	28.4%		47.8%		34.8%
Number of Investments	311	75.1%	103	24.9%	414
Total Capital per Investment (ATS mn)	17.1		58.0		27.3
1996	Direct FDI		Indirect FDI		Total FDI
Total Capital Stock (ATS mn)	29042.75	73.6%	10435.52	26.4%	39478.27
Parent Employment	92485	65.7%	48301	34.3%	140786
Affiliate Employment	59419	69.6%	26006	30.4%	85425
Affiliate/Total Employment	39.1%		35.0%		37.8%
Number of Investments	682	75.0%	227	25.0%	909
Total Capital per Investment (ATS mn)	42.6		46.0		43.4

Source: Austrian National Bank; own calculations

This is mainly the result of different investment patterns during the early 1990s and thereafter. At the beginning of the economic integration between Austria and her adjacent Eastern European neighbours many small and medium-sized enterprises (SME) used their first-mover advantages which can be attributed to long lasting historical and cultural ties (Altzinger and Winklhofer 1998; Schröter 1994). However, due to weak financial capabilities of these firms capital per investment has been rather small. After this initial period the integration process has proceeded rather quick and the economic stabilisation of the transition countries has improved. These changes have attracted even some very large investments of Austrian firms. Therefore the amount of capital invested has increased from ATS 27 million in 1991 to ATS 43 million in 1996 and in 1996 the amount of capital per investment does not differ any longer between direct and indirect FDI. Another reason may be the cumulative learning

processes of early movers (Porter 1990), i.e. small Austrian firms which expand their operations based on the positive experience after their early entry. This may also reflect the competitive advantage vis-à-vis latecomers.

Employment figures increased in accordance with total capital invested. The large increase is evident for both parent and affiliate employment. Parent employment growth can be explained mainly by the strong increase of number of parent firms investing in CEECs. The share of affiliate employment in total (affiliate and parent) employment remained relatively stable throughout the period 1991-1996. However, whilst direct FDI has increased their share of affiliate employment rather strongly indirect FDI has not. Indeed, their share of affiliate employment decreased considerably.

Table 4 provides evidence about the industry structure of direct and indirect FDI.[2] Differences between direct and indirect FDI arise partly from the fact that they are active in different sectors in the host countries. The sectoral distribution of total FDI shows that nearly 60% is allocated to the non-manufacturing sector and only 40% to manufacturing. Within the non-manufacturing sector the largest sectors are finance and insurance (20.5%), trade (18.1%), real estate and business activities (7.9%), which includes holding companies, and construction (6.0%). However, there are considerable differences between direct and indirect FDI. It is in particular the trading sector where indirect FDI accounts for a very large share. In the finance and insurance and real estate and business services direct FDI shows considerably larger shares.[3] The difference in business services can be explained only by the existence of holding companies in this sector.[4] Within the manufacturing sector, the food and beverage industry is dominated by Austrian-owned firms and chemicals and petroleum and electrical equipment is strongly dominated by indirect FDI. Further we have aggregated an engineering sector which consists of metal products, machinery, electrical, and transport equipment and which accounts for 10 % of total FDI. In this sector indirect FDI is more important than direct FDI.

[2] The industrial distribution of Austrian investment in CEECs in Table 4 is displayed by the classification of the host country.

[3] Two very large banks (RZB and Creditanstalt/Bank Austria) are 'market leaders' in CEECs.

[4] Indirect FDI will in fact only invest in holding companies by their parent firm which is located somewhere outside Austria and therefore is not be displayed in Table 4.

Table 4: Industrial Distribution of Austrian Direct and Indirect FDI in CEECs by host country industry, 1996

	Direct FDI		Indirect FDI		Total FDI	
	ATS mn	Percentage Share	ATS mn	Percentage Share	ATS mn	Percentage Share
Mining	**504**	**1.7%**	**34**	**0.3%**	**538**	**1.4%**
Food & beverages	2434	8.4%	156	1.5%	2590	6.6%
Textiles	262	0.9%	-	-	262	0.7%
Wood products	442	1.5%	13	0.1%	455	1.2%
Paper & publishing	1305	4.5%	197	1.9%	1502	3.8%
Chemicals & petroleum	560	1.9%	2470	23.7%	3031	7.7%
Non-metallic products	2241	7.7%	1139	10.9%	3380	8.6%
Metal	929	3.2%	114	1.1%	1043	2.6%
Machinery	293	1.0%	239	2.3%	532	1.3%
Electrical equipment	1120	3.9%	1101	10.6%	2221	5.6%
Transport equipment	38	0.1%	122	1.2%	160	0.4%
Other manufacturing	245	0.8%	40	0.4%	285	0.7%
Manufacturing Sector	**9868**	**34.0%**	**5591**	**53.6%**	**15459**	**39.2%**
Thereof: Engineering Sector	*2380*	*8.2%*	*1576*	*15.1%*	*3956*	*10.0%*
Construction	1804	6.2%	578	5.5%	2382	6.0%
Trade	4026	13.9%	3117	29.9%	7143	18.1%
Hotels & restaurants	1956	6.7%	22	0.2%	1978	5.0%
Transport & communication	309	1.1%	-	-	309	0.8%
Finance & insurance	7071	24.3%	1006	9.6%	8077	20.5%
Business services	3097	10.7%	31	0.3%	3128	7.9%
Other services	407	1.4%	57	0.5%	464	1.2%
Non-Manufacturing Sector	**18670**	**64.3%**	**4811**	**46.1%**	**23482**	**59.5%**
Total	*29043*	*100.0%*	*10436*	*100.0%*	*39478*	*100.0%*

Source: Austrian National Bank; own calculations

2. Main characteristics of the survey data

The following analysis covers 150 firms which have engaged in at least one investment in CEECs. 112 of these firms (74.7%) are direct FDI and 38 indirect FDI (25.3%).[5] Throughout the analysis we distinguish between an 'initial investment' period (1989-95) and a 'post-investment' period (1995-98). It is indeed the 'initial investment' period when almost all Austrian investors have made their first investment. Most of the recent investments have been an expansion of the early investments. During the post-investment period the stabilisation of the transitional economies has proceeded and some very large investments have been carried out. Tables five to eight show the

[5] Since not each firm replied to all questions the number of respondents in tables five to eight is always below the total of 150.

differences of regional sales structure for direct and indirect FDI.

Parent Firms

Table 5 presents the regional sales structure of the parent firms. Only 56.3% of total output has been sold on the Austrian market. The largest share of exports (24.5%) was shipped to the EU and another 12.8% to CEEC markets. A comparison of direct and indirect FDI reveals that non-Austrian owned firms display larger export activities than Austrian ones. Their export shares are 49.3% and 42.0% respectively. Indirect FDI exports more to the EU and CEECs alike. However, none of these differences are significant.

Table 5: Regional Sales Structure of Parent Firms, 1995 (in %)[6]

Type of Firm		Austria	EU (except Austria)	CEEC	Others
Direct FDI	mean	58.0	23.9	12.2	5.9
	N	89	89	89	89
Indirect FDI	mean	50.8	26.4	14.8	8.0
	N	28	28	28	28
Total	mean	56.3	24.5	12.8	6.4
	N	117	117	117	117
t-test for Equality of Means:					
mean difference		7.3	-2.4	-2.7	-2.1
t-values		0.97	-0.41	-0.55	-0.80

The impact of FDI on export activities is also reflected by the changes of the regional sales structure. Diminishing market shares in CEECs point to a substitutive relationship between investments and exports and vice versa. As illustrated by several authors (Bergsten et al. 1978; Lankes and Venables 1996) it might be the case that in the initial stage of investment the vertical integration aspect may dominate and therefore investment will boost exports. In later stages horizontal investment may be more important, leading to a substitutive relationship. Accordingly, we expect rising market shares of CEECs during the initial period of investment and stable or declining market shares in the post-investment period.

Table 6: Changes of Regional Sales Structure of Parent Firms, 1989-95 (in %)

[6] Table five to eight present results of independent-samples t-tests which has been calculated to test for the significance of the mean differences between direct and indirect FDI. Before testing the significance of the mean differences a Levene Test has been performed to control for the equality of variances (Norušis 1997, p.231ff.). Asterisks (***, **, *) indicate significance levels (1, 5 and 10%).

Type of Firm		Austria	EU (except Austria)	CEEC	Others
Direct FDI	Mean	-6.4	1.9	4.2	0.3
	N	80	80	80	80
Indirect FDI	Mean	-5.8	1.3	3.3	1.2
	N	25	25	25	25
Total	Mean	-6.3	1.8	4.0	0.5
	N	105	105	105	105
t-test for Equality of Means:					
mean difference		-0.6	0.6	0.9	-0.9
t-values		-0.31	0.38	0.44	-0.53

The initial investment has been accompanied by a considerable shift of the sales structure (see Table 6). On average the parent firms have improved their total export shares by 6.3 percentage-points. The largest increase has been performed on markets in CEECs (+4.0 percentage-points) but even the EU-market shares have grown (+1.8 percentage-points). Hence, the internationalisation of these firms was not restricted to CEE markets only. Although the share of sales in CEECs improved stronger than those in EU markets, the internationalisation of the sample firms was *simultaneous* and *geographically diversified*. Hence, these results show typical patterns of globally acting firms. Moreover, the expected complementary relationship between investments and exports seems to be confirmed.[7] Again, there are no significant differences between direct and indirect FDI.

Table 7: Expected Regional Sales Structure of Parent Firms, 1995-98 (in %)

Type of Firm		Austria	EU (except Austria)	CEEC	Others
Direct FDI	Mean	-4.4	1.5	2.1	0.9
	N	88	88	88	88
Indirect FDI	Mean	0.0	-0.5	0.5	0.1
	N	28	28	28	28
Total	Mean	-3.4	1.0	1.7	0.7
	N	116	116	116	116
t-test for Equality of Means:					
Mean difference		-4.4	2.0	1.6	0.8
t-values		-3.92***	1.87*	1.40	-1.14

[7] Within the period 1989-95 80% of the firms exhibit growing parent sales, whereas 20% of the sample had declining parent sales. However, a separate analysis of these two groups of firms does not show major differences.

Table 7 shows the expected changes of the parent firm's sales structure for the post-investment period 1995-98. Interestingly, the general pattern of the initial period of investment seems to be extended. On average it is expected that the internationalisation process will continue into both directions, Eastern and Western Europe alike. However, for this period there are differences between direct and indirect FDI. Direct FDI show a deeper international division of labour than indirect FDI. The former group improves its export activities to the EU as well as to the CEECs much stronger than indirect FDI. The superior performance is only significant for exports to the EU.

Further, the complementary relationship between investments and exports to the CEECs holds for direct FDI only. This pattern might be an indication that direct FDI still expands further whilst indirect do not.

Affiliates

Next we analyse the sales structure of the affiliates and distinguish between two different motives of investment, i.e. '*efficiency-based*' and '*market-driven*' FDI. Presumably the first one would indicate that the dominant factor of investment is to get access to a cheap industrial workforce. Such a scenario would presumably substitute exports from the home country and encourage re-imports to the home country. These investments are usually associated with 'relocation'. In contrast, market-driven FDI is mainly accompanied by a considerable expansion of demand in the host country. Such affiliates are mainly self-contained production units rather than a part of an integrated network like efficiency-based FDI. Therefore the production of these affiliates should be sold to a large extent on local markets.

Table 8: Regional Sales Structure of Affiliates, 1995 (in %)

Type of Firm		Local Market	EU (incl. Austria)	Thereof: Austria	other CEECs	others
Direct FDI	Mean	61.9	25.3	12.3	10.0	2.8
	N	95	95	95	95	95
Indirect FDI	Mean	79.7	15.0	4.2	2.8	2.5
	N	24	24	24	24	24
Total	Mean	65.5	23.2	10.6	8.5	2.7
	N	119	119	119	119	119
t-test for Equality of Means:						
mean difference		-17.7	10.3	8.1	7.2	0.3
t-values		-2.20**	1.50	2.53**	2.70***	0.13

Table 8 shows the regional sales structure of the affiliates for 1995. On average the local markets account for 65.5% of total sales. However, even 23.2% were shipped to EU markets, thereof 10.6% to

Austria. The sales structure of the affiliates differs strongly between direct and indirect FDI. Firstly, the local market share of indirect FDI is significantly larger than for direct FDI, which is an indication that the division of labour is more advanced with the latter. Secondly, for direct FDI trade relations between affiliates and their Austrian parent firms are significant deeper than those of indirect FDI. Whilst the former group exports 12.3% of their sales back to Austria this share is only 4.2% for indirect FDI. These patterns clearly indicate that the division of labour is more advanced with direct FDI. Finally, we can see that exports from the affiliates further East are significantly higher for direct FDI than for indirect FDI. A closer look to more disaggregated data (which are not presented here) shows that this can be mainly explained by higher export activities of direct FDI within the trading and other non-manufacturing sectors.

These patterns for overall trade are also supported by data on intra-firm trade as published by the Austrian National Bank.

Intra-firm trade

Intra-firm trade (IFT) gives an indication of the role affiliates play in relation to the parent company. Intra-firm trade patterns are dependent on the various types of investment (market- or efficiency-based FDI), on the sectoral composition of investment and additionally, may change substantially over time (e.g. Braunerhjelm 1998).

In our sample both, direct and indirect FDI, display large IFT surpluses seen from the Austrian perspective. Total IFT surplus increased from ATS 1.2 billion in 1991 to ATS 5.5 billion in 1996, a surplus which is primarily due to indirect FDI. Although indirect FDI accounts only for 26.4% of total capital in 1996 (see Table 3) these firms have achieved 51.3% of total intra-firm exports and 35.6% of total intra-firm imports. Hence, these firms realised nearly two thirds of the IFT surplus total. All sectors - except food and beverages and other manufacturing - achieved an IFT surplus. Not surprisingly, the trading sector accounts for the largest share. This surplus has been achieved to a very large extent by indirect FDI. If these exports are accompanied by similar imports to the Austrian firm (which is in fact an affiliate of a foreign MNE), the overall effect on the trade balance need not be positive. Also several other studies have shown that foreign affiliates are more import-dependent than domestic firms (Brenton and DiMauro, 1998; Neudorfer, 1997), especially when they are market-oriented rather than efficiency-oriented.

IFT is particularly pronounced in the engineering sector, which accounts for one third of total intra-firm exports and 50% of total intra-firm imports. This applies to direct as well as indirect FDI and indicates that the international division of labour is well developed within this sector. In contrast to the IFT patterns of the trading sector, this pattern can be associated with a vertical production structure where intermediate goods are shipped forwards and backwards. Contrary to the expected import surplus, even this efficiency-oriented sector achieved a considerable intra-firm export

surplus.[8] Summarising, the clear difference of trade and IFT patterns give rise to the assumption that direct and indirect FDI are based on different motives.

Table 9: Intra-Firm (IF) Trade, 1996 (in ATS mn)

			Type of Firm		
			Direct FDI	Indirect FDI	Total FDI
Sectors	Food & Beverages	IF-Exports	56.5	40.1	96.6
		IF-Imports	188.0	5.6	193.6
		IF-Balance	-131.5	34.5	-97.0
	Petroleum, Chemicals	IF-Exports	97.8	687.4	785.2
		IF-Imports	96.9	624.8	721.7
		IF-Balance	.9	62.6	63.5
	Non-Metallic Products	IF-Exports	352.8	87.1	439.9
		IF-Imports	83.6	44.8	128.4
		IF-Balance	269.2	42.3	311.5
	Engineering	IF-Exports	2,375.5	813.1	3,188.6
		IF-Imports	1,375.9	511.1	1,887.0
		IF-Balance	999.6	302.0	1,301.6
	Other Manufacturing	IF-Exports	321.9	193.9	515.8
		IF-Imports	524.9	31.1	556.0
		IF-Balance	-203.0	162.8	-40.2
	Construction	IF-Exports	94.0	25.5	119.5
		IF-Imports	5.3	28.1	33.4
		IF-Balance	88.7	-2.6	86.1
	Trade	IF-Exports	1,105.5	2,809.8	3,915.3
		IF-Imports	52.9	41.7	94.6
		IF-Balance	1,052.6	2,768.1	3,820.7
	Finance & Insurance	IF-Exports	.0	.0	.0
		IF-Imports	.0	.0	.0
		IF-Balance	.0	.0	.0
	Other Non-Manufacturing	IF-Exports	17.2	.0	17.2
		IF-Imports	2.9	.0	2.9
		IF-Balance	14.3	.0	14.3
Total	IF-Exports		4,421.2	4,656.9	9,078.1
	IF-Imports		2,330.4	1,287.2	3,617.6
	IF-Balance		2,090.8	3,369.7	5,460.5

Source: Austrian National Bank; own calculations

[8] It should be emphasised that the industry classification is that of the host country, therefore the IFT of the engineering sector does not include a large proportion of finished goods as they would be classified under the industry ”trading sector”.

IV. Estimation and Results

1. The explanatory power of the motives for the trade structure of parent and affiliate firms

Previous analysis has demonstrated the predominance of market-driven motives for Austrian FDI in CEECs (Altzinger and Winklhofer 1998, Neudorfer 1997). Efficiency-oriented motives, 'low-wage costs' in particular, are only of minor importance.[9] However, it has been shown that the ranking of efficiency-oriented and market-driven motives is different for particular industries. In the analysis that follows we evaluate the impact of these different motives on the export performance of parent and affiliate firms alike. We expect that market-driven motives improve exports to CEECs by the parent firms whilst the affiliates sell most of their output at local (foreign) markets and export only small amounts to the EU. In contrast, if efficiency-oriented motives dominate, we expect strong exports to the EU by the affiliates and only small exports to CEECs by parent firms.

To test for the impact of different motives on the export performance of parent firms and affiliates we specify the following model:

$$EX_{CEEC} = ß_0 + ß_1 M + ß_2 W + ß_3 S + \hat{u} \qquad (1)$$

EX_{CEEC} are the share of exports to CEECs by total exports and M, W and S denominates the motives 'market potential', 'wage costs' and strategic considerations. To test for the possibility that coefficients differ for direct and indirect FDI we have specified a second equation:

$$EX_{CEEC} = ß_0 + ß_1 M + ß_2 W + ß_3 S + ß_4 D_I + ß_5 M_I + ß_6 W_I + ß_7 S_I + \hat{u} \qquad (2)$$

In equation (2) we introduce a dummy variable for indirect FDI (D_I) and variables of the different motives for indirect FDI only (M_I, W_I, S_I). Hence we test whether there still is a different impact of motives on the export performance for direct and indirect FDI.

[9] Market-driven motives are among others market potential and proximity to customers whilst efficiency-oriented motives are low wage costs, availability of skilled labour, intermediate inputs and procurement.

Table 10: OLS Regression Results for Parent Exports to CEECs

Independent variables	$ß_n$	t-value	Significance
Equation (1)			
Const.	2.75	0.11	0.91
M	10.82	2.31	0.02**
W	-8.50	-1.89	0.06*
S	7.27	1.72	0.09*
N=76; R^2=0.19			
Equation (2)			
Const.	3.71	0.13	0.90
M	9.68	1.87	0.07*
W	-8.64	-1.65	0.10*
S	8.55	1.85	0.07*
D_I	-18.35	-0.25	0.80
M_I	9.01	0.63	0.53
W_I	5.16	0.43	0.67
S_I	-11.24	-0.81	0.42
N=76; R^2=0.20			

***, **, * indicate significance at the 1, 5 and 10% significance level

Results of equation (1) and (2) are shown in Table 10.[10] It can be seen that the ranking of the motive 'market potential' indeed increases exports to CEECs of the parent firms whilst 'low-wage costs' decreases exports considerably. The value of the coefficient shows that a one-point higher ranking of the motive 'market potential' improves the export performance of the parent firm by 10.8%-points. Furthermore, even strategic considerations are of importance for the export performance of the parent firm. All three independent variables are significant.

Results for equation (2) show that these three motives explain export performance only of direct FDI. All coefficients for indirect FDI are of weak significance.11 However, the size of the coefficients ß5 to ß7 shows that the 'market potential' is of much higher importance for indirect FDI than for direct FDI12, while the impact of 'wage costs' and 'strategic considerations' for indirect FDI

[10] Questions on motives were of a close-ended variety where the degrees of importance were based on a four-point scale using irrelevant (1), of minor relevance (2), important (3), and very important (4). Results are shown only for selected motives.

[11] Certainly, the weak explanatory power of this regression is partly due to the low number of observations for indirect FDI.

[12] We have to note that for indirect FDI the impact of 'market potential' on exports can be calculated

is considerably smaller. Remarkably, the coefficients for direct FDI remain relatively stable even for specification (2).

To test the explanatory power of these motives for the export performance of the affiliates we have specified the model shown in equation (1) and (2) for exports of the affiliates to the EU (EX_{EU}):

$$EX_{EU} = ß_0 + ß_1 M + ß_2 W + ß_3 S + \hat{u} \qquad (3)$$

$$EX_{EU} = ß_0 + ß_1 M + ß_2 W + ß_3 S + ß_4 D_I + ß_5 M_I + ß_6 W_I + ß_7 S_I + \hat{u} \qquad (4)$$

Table 11: OLS Regression Results for Affiliate Exports to EU

Independent variables	$ß_n$	t-value	Significance
Equation (3)			
Const.	100,36	5,29	0,00***
M	-21,15	-5,97	0,00***
W	6,67	2,03	0,05**
S	-7,91	-2,50	0,01***
N=76; R^2=0.45			
Equation (4)			
Const.	93.16	4.47	0.00***
M	-18.85	-4.92	0.00***
W	7.96	2.11	0.04**
S	-9.63	-2.82	0.01***
D_I	40.74	0.65	0.52
M_I	-14.08	-1.20	0.23
W_I	-5.72	-0.73	0.47
S_I	9.92	0.96	0.34
N=76; R^2=0.48			

***, **, * indicate significance at the 1, 5 and 10% significance level

Results explaining affiliate exports to the EU are encouraging (see Table 11), as they are quite well predicted. Again, ‘market potential’ explains most. A one-point higher ranking of this motive reduces affiliate exports to the EU by 21.2%-points. Also, strategic motives decrease exports to the EU. In contrast, ‘wage costs’ increase affiliate exports. However, the quantitative impact of ‘wage costs’ is much lower than that of ‘market potential’.

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only by adding the coefficients $ß_1$ and $ß_5$. The same holds for ‘wage costs’ (adding $ß_2$ and $ß_6$) and strategic considerations (adding $ß_3$ and $ß_7$).

As equation (4) in Table 11 demonstrates, the general explanation above can be confirmed for direct FDI only. However, a thorough interpretation of the coefficients shows again that for indirect FDI a one-point higher rating of the motive 'market potential' decreases exports to the EU much stronger than for direct FDI (see footnote 13). In contrast to this important difference the impact of strategic considerations and 'wage costs' on exports to the EU for indirect FDI is negligible. Nevertheless, we have to keep in mind that the significance level of all three coefficients (ß5 to ß7) is rather low.

To summarise these different explanations of parent and affiliate exports we conclude that the export performance of direct FDI is strongly explained by market-driven motives, and 'wage costs' and strategic motives provide additional explanations, while for indirect FDI only 'market potential' explains the export performance of the affiliates.

2. Impact of parent and affiliate sales on domestic employment

Next, we look at the impact of affiliate sales on domestic employment. For that purpose we have chosen a simple descriptive model (see Blomström et al., 1997). Such an approach tries to evaluate the relationship between foreign sales and domestic employment *for a given level* of parent sales.

We have tested the following relationship:

$$PE = ß_0 + ß_1 PS + ß_2 AS + \hat{u}, \qquad (5)$$

where parent employment (PE) is explained by parent sales (PS) and affiliate sales (AS) alike. Since from our theoretical discussion above we expect different effects of direct and indirect FDI, we test for differences with a new specification of Equation 5:

$$PE = ß_0 + ß_1 PS + ß_2 AS + ß_3 D_I + ß_4 PS_I + ß_5 AS_I + \hat{u} \qquad (6)$$

Table 12: OLS Regression Results for Parent Employment, 1995

Independent variables	$ß_n$	t-value	Significance
Equation (5)			
Constant	386.82	3.82	0.00***
PS	0.26	10.40	0.00***
AS	-0.75	-2.83	0.01***
N=74; R^2=0.74			
Equation (6)			
Constant	372.04	3.38	0.00***
PS	0.27	10.60	0.00***
AS	-0.88	-3.23	0.00***
D_I	-410.07	-1.25	0.22
PS_I	0.40	1.39	0.17
AS_I	0.63	0.66	0.51
N=74; R^2=0.76			

***, **, * indicate significance at the 1, 5 and 10% significance level

The results for equation (5) and (6) are presented in table 12. The estimation results suggests that parent sales increase parent employment whilst higher affiliate sales reduce it. The size of the coefficients imply that an increase of parent sales by ATS 1 million induces 0.26 additional parent employees. In contrast, an additional ATS million of affiliate sales reduces parent employment by 0.75 employees.[13] Due to the crudeness of this relationship a cautious interpretation of this result is appropriate. However, it seems to be the case that larger foreign affiliate production is associated with an allocation of labour-intensive value added stages of production to foreign countries whilst capital-intensive production is performed at home. Although such a scenario is associated with a relocation of labour, such FDI are efficiency enhancing and therefore improve the overall competitiveness of the MNE.

However, a separate evaluation of this relationship for direct and indirect FDI shows considerable differences.[14] (cf. Equ. 6) First, parent firms of indirect FDI are in general much smaller than parent firms of direct FDI. Second, parent sales of indirect FDI are much more labour-intensive than parent sales of direct FDI. Regarding the effect of *parent* sales on parent employment for indirect

[13] However, the difference of these two coefficients is mainly due to different labour-output relations between Austria and the CEECs.

[14] For a proper interpretation of the coefficients in Equ. (6) see footnote 13.

FDI, the evaluation now suggests an increase of parent employment of 0.67[15] from an additional ATS 1 million parent sales whilst for direct FDI this increase is only 0.27. Considering the effect of the *affiliate* sales on parent employment, additional sales of ATS 1 million reduces domestic employment by 0.88 whilst this negative effect is only 0.25[16] for indirect FDI.

3. Aspects of the internal division of labour

The results of this analysis indicate that direct FDI is more of an efficiency-type than indirect FDI. It suggests that direct FDI has stronger direct linkages between the activities of the parent firm and its affiliates in CEECs. Indeed, we are able to show empirically that firms of the direct FDI-type have improved domestic and foreign employment simultaneously by improving their internal division of labour. This is mainly due to the fact that Austrian investors in CEECs include many small and medium-sized firms, which actively started to restructure their activities via FDI in adjacent countries after 1989. Geographical proximity is a driver of FDI (Martin and Velazquez 1997; Holland and Pain, 1998), reflected here in the relatively deeper integration of Austrian firms when compared to other MNEs. Proximity is expressed in such terms as easier market entry, prior information, lower transport costs. Moreover, local market shares of indirect FDI are higher than of direct FDI. In addition, (re-) exports to Austria from direct FDI are higher than from indirect FDI.

Our regression analysis underpins this pattern by distinguishing between direct and indirect FDI. We explain exports to CEECs by the parent firm as well as exports to the EU by their affiliates by different motives for FDI, namely market-driven, strategic and efficiency-oriented. The results reveal that direct investment can be much better explained by these motives (i.e. they are statistically significant) than indirect FDI (where motives, except the market motive, lack statistical significance). We explain this difference by the different linkages between parent firms and affiliates of direct and indirect FDI.

In Austria, most affiliates of foreign MNEs were based on market seeking motives (see Table 13).

Table 13. Motives of foreign investors in Austria

Selected home countries	Labour-cost	Market	Sourcing	Tax
Germany	2.4*	69.0	2.1	1.5
Switzerland	1.8	54.6	2.1	4.8
Netherlands	0.0	73.4	0.0	1.6
USA	0.5	69.9	0.5	3.2
Total	*1.5*	*66.3*	*2.3*	*2.6*
EU	*1.7*	*69.6*	*2.1*	*1.7*

* percentage of affiliates
Source: Austrian National Bank, 1998, Table 10.2.

[15] = (0.27 + 0.40)
[16] = (- 0.88 + 0.63)

These results are also in line with other research (e.g. Taggert and Hood, 1999) on the role of decisions taken by Headquarters (HQs), or in other words, the extent of affiliate autonomy: The HQ's influence is usually dominant "where central resources are directly affected or drawn upon; where long-term obligations result; and where the decisions involve standardisation and a common framework of organisational routines and practices." Most of these factors apply to marketing and sales activities, which points to a low autonomy of the Austrian affiliate. This in turn might imply, that production decisions concerning CEECs are taken by the parent firm directly. The propensity of HQs to use their affiliates for the collective benefit of the enterprise as a whole increases with the unique "skills" of the unit in question. (see e.g. Taggert and Hood, 1999, p. 228) Furthermore, a survey among foreign affiliates of multinational enterprises in Vienna shows clearly the predominance of 'market-oriented' functions (marketing, customer services, distribution) of the Austrian affiliates which operates as a HQ for the East. Only a very small percentage of their subordinated firms in the East are active in production (7%) whilst 61% are active in distribution and 32% carry out servicing activities (Mayerhofer and Wolfmayr-Schnitzer 1997).

The underlying structure of the motives indicates that the parents use their Austrian affiliate in particular for sales-related activities not only in Austria, but also in CEECs, utilising their specific market know-how. This is consistent with Porter's explanation (1990, p. 47), that "early movers gain advantages such as being first to reap economies of scale, reducing costs through cumulative learning, establishing brand names abroad and customer relationships without direct competition, getting their pick of distribution channels, and obtaining the best locations for facilities or the best sources of raw material or other inputs." The changes in CEECs after 1989 created unique opportunities for foreign parent firms to enter CEECs markets through their Austrian affiliate.

In CEECs, Austrian MNEs intensified their international division of labour over time and moved from sales to production. The foreign MNEs located in Austria did not follow this sequence. This does, however, not imply that both groups' activities in CEECs will differ, as the latter group organises their strategic and efficiency-oriented FDI not via their Austrian affiliate.

V. Discussion and Conclusions

The paper started from a few stylised facts on Austrian FDI in CEECs. At first glance, the descriptive results presented here seemed to contradict the stylised facts as presented in the introductory section about the relatively better employment performance of Austrian-owned firms. Further investigation led to the conclusion that the sales and trade structure derived from the underlying motives of FDI provide a consistent picture of direct and indirect FDI. In particular, the underlying ownership structure of foreign investors seems to be an important determinant of employment effects of outward FDI on home countries. The results of this analysis confirm that direct FDI is more of an efficiency-type than indirect FDI.[17]

We have found that FDI in CEECs by direct and indirect investors are motivated by different factors. Foreign-owned firms (indirect FDI) use their Austrian affiliates as bridgeheads and engage primarily in market-oriented FDI in CEECs. The fact that a large wage gap still exists, suggests that direct FDI engages in a re-allocation of labour-intensive activities to CEECs. The additional fixed costs in production relocation are thus partly balanced by lower variable costs. In addition, it is most likely, that the Austrian firm enjoys cost advantages vis-à-vis local firms deriving from higher productive efficiency which improves the position in the local market. Both factors contribute to sustainable competitive advantage at home, resulting in an overall (net) increase in domestic employment. This is reflected by the superior development of domestic sales and employment of direct FDI shown above. Direct FDI has much stronger trade linkages between the parent firm and its affiliates in CEECs. Generally, it seems to be that firms of the direct FDI-type have improved domestic and foreign employment simultaneously by improving their internal division of labour internationally.[18]

The results derived here on an aggregated level also bear some micro-economic logic as argued in studies about the division of labour between parent and affiliates, and the autonomy of affiliates in particular. Such studies take the value-added chain as a starting point. The number, importance and quality of the activity of an affiliate within the internal division of labour of the MNC determines the degree of autonomy and *inter alia* whether the affiliate itself engages in affiliates in foreign countries (indirect FDI). The affiliates' activities range from simple assembly operations to World Mandate status. Young, Hood and Peters (1994) describe "developmental affiliates" as firms which are able to combine their competitive advantage (provided by the parent) and indigenous resources in a unique way. The market know-how of Eastern Europe from prior exporting is such a factor which in combination with the product or service results in a unique position of the Austrian affiliate within the whole group of the MNE.

From the viewpoint of a national economy, the basic difference between direct and indirect

[17] However, these results portray "an average" investor, as of course, both groups of firms engage in more than one type of FDI, based on more than one exclusive motive.

[18] Case study evidence presented in Altzinger et al. (1998) supports this conclusion.

FDI is related to the aspect of the locus of decision making (Bartlett and Ghoshal 1989; Birkinshaw and Morrison 1995; Dunning 1990). Sometimes, a ”metropolitan – hinterland” relationship is suggested, where the headquarter is responsible for the strategy, the affiliate for operational sales targets. The trade structure of the Austrian headquarter and her FDI compared to the foreign affiliate in Austria and her FDI resembles this type of relationship. In particular, the Austrian affiliate can be used by the foreign parent for transit trade to her affiliate in the CEEC (indirect FDI). Where substantial business decisions are concerned, MNEs seem to manage their foreign affiliates on a very short leash. This may affect production activities of foreign MNEs in CEECs which are not organised via their Austrian affiliate, but directly from the parent abroad (see right dashed arrow in Figure 1).

The evidence about a change in the effect over time (i.e. a shift from the left-hand dashed arrow to the right-hand dashed arrow in Figure 1) presented here is also consistent with evidence published by the Austrian National bank (see Table 3 above). A possible explanation is that the specific experience of the affiliate located in Austria has been lost towards the affiliate in CEECs and that HQs outside Austria have already built up their own CEEC-competence. Moreover ”Austrian FDI in the CEECs has become controlled more and more by Austrian firms.” (Neudorfer 1997, p. 57) Indirect FDI nevertheless remain an important determinant of the domestic employment effect of Austrian FDI in CEECs. Also, our survey included a question on the future strategies of investors in CEECs and although the plans of firms need not materialise *in praxi*, the answers point to the same direction.[19]

To summarise, the paper provides evidence, that a division between different types of investors sheds new light on the question of production relocation. In particular, the specific argument used here, is that the employment effect depends not only on the amount of FDI, but also on the ownership structure of investors.

The plausibility of the aggregated results on the micro-economic level also lead to the conclusion that the relocation of parts of the value-chain of firms and its positive effects on domestic employment and the overall competitiveness of the remaining domestic value-added stages could be actively supported by selective policy measures like the provision of information on host countries. Fears of welfare loss of the developed region when integrating with a less developed region seem to be unjustified, concerning trade and FDI relationships. On the contrary, the evidence points to positive employment effects at home.

[19] Other results of our survey show a relatively higher share of direct FDI who intend to engage in ”production” in the future, while the ratio is much lower for indirect investors. On the other hand, an expansion of ”distribution and services” is intended by a higher number of indirect FDI than of direct FDI.

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Zusammenfassung

Direkte vs. indirekte Direktinvestitionen: Auswirkungen auf heimische Exporte und Beschäftigung. Eines der spezifischen Charakteristika österreichischer Direktinvestitionen (FDI) im Ausland ist, daß ein großer Teil dieser Unternehmen Töchter ausländischer Multinationaler Unternehmen (MNEs) sind. Das Ziel dieses Artikels ist zu analysieren, ob die relativ bessere Beschäftigungsentwicklung der heimischen Unternehmen (direkte FDI), verglichen mit jener ausländischer Unternehmen (indirekte FDI) in Österreich von FDI im Ausland abhängt. Aufgrund einer Analyse der Umsatz und Handelsstruktur einer Stichprobe österreichischer Investoren in Mittel- und Osteuropäischen Ländern (MOEL), wird in diesem Artikel die Hypothese getestet, daß diese beiden Gruppen von Investoren unterschiedliche Motive haben, in MOEL zu investieren und sich daher die Art ihrer Aktivitäten unterscheidet (Vertrieb, Produktion) und schließlich die heimischen Beschäftigungseffekte. Regressionsresultate bestätigen, daß direkte FDI stärke durch Arbeitskosten erklärt werden und ein Beschäftigungsmuster einer verstärkten internationalen Arbeitsteilung (inklusive Produktion) zeigen, während indirekte FDI relativ stärker auf marktorientierten FDI aufbauen. Die empirischen Resultate zeigen ferner, daß der Beschäftigungseffekt in Österreich unterschiedlich ist. Der positive (negative) Effekt einer zusätzlichen Einheit Mutter-(bzw. Tochter-)umsätze auf die heimische Beschäftigung ist bei indirekten FDI im Vergleich zu direkten FDI größer (bzw. kleiner). Die trotz dieser empirischen Tatsache relativ bessere heimische Beschäftigungsentwicklung bei direkten FDI kann durch deren bessere Umsatzentwicklung erklärt werden, die aus der Restrukturierung der internationalen Arbeitsteilung resultiert.

Figure 1. Definition of Direct vs. indirect FDI