

**The effects of Foreign Direct Investments on employment  
within the domestic market:**

**An empirical analysis of German medium-sized businesses**

Florian B. Zapkau  
University of Giessen  
Faculty of Economics and Business Administration  
Licher Str. 66  
35394 Giessen  
Germany  
florian.zapkau@wirtschaft.uni-giessen.de

Christian Schwens  
University of Giessen  
Faculty of Economics and Business Administration  
Licher Str. 66  
35394 Giessen  
Germany  
christian.schwens@wirtschaft.uni-giessen.de

Rüdiger Kabst  
University of Giessen  
Faculty of Economics and Business Administration  
Licher Str. 66  
35394 Giessen  
Germany  
ruediger.kabst@wirtschaft.uni-giessen.de

**The effects of Foreign Direct Investments on employment within the domestic market:**

**An empirical analysis of German medium-sized businesses**

General public raises the question whether Foreign Direct Investments (FDI), coming from a high-wage country such as Germany, evokes relocation of jobs and therefore leads to a reduced employment within the domestic market. In this regard it is often neglected that FDI can be of horizontal as well as of vertical nature and can be connected to diverse employment effects. The following study analyses employment effects of FDI on the domestic market on the basis of a representative sample of 1.188 German small and medium-sized companies. The results point out that a profound analysis of employment effects of FDI is necessary. Whereas horizontal FDI lead to complementary employment effects, vertical FDI go along with substitutive employment effects on the domestic market.

**Keywords:** Foreign Direct Investment (FDI), small and medium-sized businesses (SMB), employment, multinational enterprises (MNE)

# **The effects of Foreign Direct Investments on employment**

## **within the domestic market:**

### **An empirical analysis of German medium-sized businesses**

#### **A Introduction**

On the one hand German companies have increased their workforce abroad. On the other hand domestic workforce has been reduced continuously over the same period, especially in labor intensive sectors. This raises suspicion that domestic jobs are substituted, evoked by Foreign Direct Investments (Becker et al., 2005a). Being an export nation, Germany is one of the countries which benefit from world-wide trade with goods and services to a great extent. Especially in years of weak domestic economic activity, foreign trade accounted as one of the main growth drivers in the German economy. Lacking foreign trade would have led to a significantly lower real economic growth (DIHK, 2006). Whereas on aggregated level, export is attributed with mostly positive employment effects on the domestic market, general public raises the question whether FDI from a high-wage country such as Germany leads to a reduced employment within the domestic market (OECD, 2005).

Present research regarding this issue shows a high level of heterogeneity in its findings. Discussions often neglect that economic theory differentiates between two different types of Foreign Direct Investments: horizontal and vertical FDI. Both are influenced by different determinants and are associated with different effects on domestic employment (Marin, 2004). Therefore high levels of heterogeneity within previous research are not surprising and point out that a general conclusion is insufficient. Whereas some studies identify substitutive effect of Foreign Direct Investments on employment within the domestic market (i.e. Brainard & Riker, 1997; Braconier & Ekholm, 2000; Konings & Murphy, 2006; Hardock, 2000), other researches show contrary effects and find complementary employment effects (i.e. Desai et

al., 2005; Hanson et al., 2003; KfW & IKB, 2004). Other studies come to ambivalent findings depending on the target region of FDI (e.g. Harrison et al., 2007).

Moreover, research on the employment effects of FDI lacks evidence from SMBs. Even though the bigger part of international active companies are small and medium-sized businesses (Brouthers & Nakos, 2004), most of previous research analyzes large scale enterprises (Etemad, 2004). A simple transfer of these findings for multinational enterprises to small and medium sized businesses is questionable, given that SMB cannot be understood as a smaller version of large firms (Shuman & Seeger, 1986; Baird et al., 1994). Besides family orientated ownership (Coviello & McAuley, 1999), SMB differ from large scale enterprises through their comparatively limited resources (van Hoorn, 1979; Erramilli & D'Souza, 1993; Calof, 1994). Thereby they come to different strategic decisions than their larger counterparts (Erramilli & D'Souza, 1993; Zacharakis, 1997; Etemad, 2004).

Thus the purpose of this study is to provide a theoretical basis for the effects of Foreign Direct Investments (horizontal and vertical) of SMB on the domestic market and to subsequently test these effects empirically. Hereby a more profound knowledge of substitutive as well as complementary effects of FDI on domestic employment is gained. The contribution of our work to reduce previous deficits in research is twofold. First, substitutive as well as complementary employment effects are analyzed through a theoretical approach of horizontal and vertical FDI. The focus is on the effects of relative factor endowment in targeted regions of FDI, motives for internationalization (market development, cost reduction) as well as the applied form of foreign market cultivation (sales subsidiaries, production subsidiaries). The second contribution of this study is to examine interdependencies on the basis of primary data of 1.188 German small and medium sized businesses. On the one hand empirical analysis leads to an objectification of the discussion about employment relocation and on the other

hand it leads to a stronger focus on German medium sized businesses, which have been neglected so far.

The paper is structured as follows: The next chapter B presents different empirical researches concerning employment effects of FDI on the domestic market. In the following chapter C the determinants of complementary and substitutive employment effects of FDI are derived from theory and hypotheses are formulated. Chapter D introduces the used dataset of German small and medium-sized businesses as well as used empirical methods, which serve to test the formulated relations. In chapter E central results are discussed and implications are derived.

## **B Empirical research**

The following section gives a review of empirical studies, which analyze the effects of FDI on domestic employment. First of all we introduce studies, which aim to discuss this topic on the basis of secondary data. Subsequently a discussion on primary data studies, which derive their results from company surveys, follows.

Desai et al. (2005) find a complementary development of employment in US-American manufacturing companies and their foreign subsidiaries. Hanson et al. (2003) also state that in the USA sales growth within foreign subsidiaries has complementary employment effects on the parent company. In contrast, Brainard and Riker (1997) find substitution effects between labour in subsidiaries and parent companies of the manufacturing sector in the US, although the effects are generally small. Harrison et al. (2007) discover that employment effects in the US depend on the location of the subsidiary. For subsidiaries located in high-wage countries they discover complementary effects between domestic and foreign employment, whereas subsidiaries in low-wage countries lead to substitutive effects. In contrast, Braconier and Ekholm (2000) analyze Swedish MNEs and find that FDI in low-wage countries has no signifi-

cant effects whatsoever, but FDI in high-wage countries leads to employment substitution between parent company and subsidiary.

Furthermore there are several studies, which especially focus on hypothesized substitution effects between parent companies and their subsidiaries in Central and Eastern Europe (CEE). Konings and Murphy (2006) discover a substitution effect within the EU 15, but do not find significant evidence for such an effect with subsidiaries located in CEE. Becker et al. (2005b) also find significant substitutive effects between Swedish or German parent companies and their subsidiaries in Western European countries as well as their subsidiaries in CEE.

Castellani et al. (2008) compare a sample of Italian MNEs, which invested in foreign production subsidiaries for the first time between 1998 and 2004, with a sample of 2.500 companies, which have not practiced any international activities during this period. Results indicate that employment development of MNEs does not differ significantly from employment development of purely national companies. The reduction in domestic employment for international companies is thereby even lower than for the peer group consisting of purely national companies.

Referring to German companies two primary data collections are of note, which use descriptive analysis in order to estimate employment effects of FDI on the domestic market.

Hardock (2000) identifies a predominant negative relation between shifts in production levels in foreign subsidiaries and domestic employment. About 47.7% of the surveyed German companies expect a negative impact on domestic employment, whereas only 26.6% name positive effects. A conjoined company survey by the KfW and the IKB (2004) comes to contrary results. About 60% of surveyed German companies state that domestic employment is secured or even created through FDI. Only 20% of surveyed companies believe in a reduction of domestic employment evoked by FDI.

These presented researches emphasize the ambivalent possible effects of Foreign Direct Investments on domestic employment. Concerning introduced secondary studies, heterogeneous results are found for different as well as identical countries. Furthermore, secondary studies are confronted with two central measurement issues: First, data concerning production of subsidiaries is often not available. Instead cash flows are used as a measure for the production level of subsidiaries, even though this is not a reliable measure (Graham, 1995). In addition to this, most available studies only take manufacturing MNEs into account, which may lead to biases, caused by declining domestic employment as well as employment abroad in this sector, following a trend reversal since the late 1970s (Andersen & Hainaut, 1998). Likewise, existing primary studies are not able to give a consistent picture concerning domestic employment effects of FDI. Obviously, different motives for FDI tend to influence the results in different ways, but are not pictured satisfactory by descriptive research.

At the present time multivariate primary studies, which display a differentiated picture of possible employment effects, do not exist. In order to overcome this lack of research, in the following chapter we derive determinants of complementary and substitutive employment effects in the context of FDI from theory and afterwards test these determinants empirically on the basis of large scale data. In contrast to research based on secondary data, primary data provides a better opportunity to ascertain whether employment effects are actually caused by internationalization or stem from domestic causes (Kletzer, 2004).

## **C Determinants of employment effects concerning FDI**

Foreign Direct Investments of German companies are often assumed to have a negative impact on domestic employment. In this context it is often neglected that academic research differs two different types of Foreign Direct Investments: horizontal FDI, where identical goods and services are each produced and respectively sold in different countries and vertical FDI, where production stages of one commodity are fragmented to different countries (Caves,

1971). Both types of FDI come along with different effects (complementary or substitutive) on domestic employment (Marin, 2004).

Henceforth the Proximity-Concentration Model (Brainard, 1993, 1997) is utilized as theoretical foundation for horizontal FDI, whereas the Factor-Proportion Model (Helpman, 1984; Helpman & Krugman, 1985) is used to explain vertical FDI. Regarding the aforementioned theoretical models, horizontal and vertical FDI differ in certain characteristics. Elaborating on Buch et al. (2005) *motives for internationalization* (market development vs. cost reduction), *target region of internationalization* (countries with similar vs. dissimilar relative factor endowments) and chosen form of *foreign market cultivation* (sales subsidiary vs. production subsidiary) can be applied as determinants for different international activities of multinational companies.

#### I. Complementary employment effects

*Motives for Internationalization:* Researches point out that a predominant part of FDI takes place between industrialized countries (as source as well as target country) and not between industrialized and developing countries (Hummels & Stern, 1994; Brainard, 1997; Carr et al., 2001). These horizontal direct investments are mostly performed in the course of market development (Helpman et al., 2004; Ekholm et al., 2007). In this case the Proximity-Concentration Model (Brainard, 1993, 1997) provides a theoretical framework. Obviously, under certain circumstances companies value the close proximity towards their foreign customers higher than taking advantage of economies of scale at home. Companies produce commodities, which are meant for foreign markets abroad, if this is more beneficial than to export from the home country. In other words, if costs of trade are higher than costs for development and maintenance of multiple plants abroad.

*Target region of Internationalization:* In this context bilateral direct investments between industrialized countries are predominant, because horizontal FDI enables these coun-

tries to enter the largest sales markets. Furthermore countries with relatively identical economic conditions are assumed to have similar demand preferences (Davidson, 1980). Therefore, according to model assumptions horizontal FDI takes place between countries with relatively identical factor endowments (Brainard, 1993, 1997; Carr et al., 2001).

*Type of foreign market cultivation:* Complementary employment effects mainly result from horizontal FDI, which serve for market development, market protection and market expansion (Schwarz & Steiner, 2008). The extent of employment effects is thereby dependant on to which degree the domestic production process is duplicated by foreign subsidiaries. Especially whenever foreign sales subsidiary are only in charge of completion and sale of commodities, an extension of domestic employment can be expected due to an increased demand for input factors and skill-intensive headquarter services” (e.g. product design) (Molnar et al., 2007).

Previous considerations concerning the market-driven realization of horizontal FDI lead to following hypotheses:

*Hypothesis 1a: Market development as motive for internationalization leads to an extension of employment within the domestic market of the company.*

*Hypothesis 1b: Internationalization towards target regions with similar relative factor endowment compared to Germany leads to an extension of employment within the domestic market of the company.*

*Hypothesis 1c: Establishment of foreign sales subsidiaries leads to an extension of employment within the domestic market of the company.*

## II. Substitutive employment effects

*Motives for Internationalization:* Vertical direct investments are primarily motivated by the fact that companies want to take advantage of different international factor prices along the production chain. By intending to reduce costs, companies shift different stages of the production process of a certain commodity, which is meant for the domestic market, to different countries. Theoretical framework is given by the Factor-Proportion Model (Helpman, 1984; Helpman & Krugman, 1985).

*Target region of Internationalization:* Fragmentation and (partial) relocation of production always takes place whenever relative factor endowments between two countries differ and therefore result in different prices for production factors in these countries. In this respect direct investments usually take place unilateral from relatively capital intensive countries to low-wage countries. According to the Factor-Proportion Model, vertically integrated companies establish production capacities especially in developing countries, since differences in factor prices concerning labor are higher between these countries and the domestic market (Helpman, 1984; Helpman & Krugman, 1985).

*Type of foreign market cultivation:* From the point of view of capital intensive countries such as Germany, relocation of production into (labor intensive) countries with lower wage level exerts pressure on domestic wages. However if factor prices are not flexible enough - which can be assumed for Germany - discharges of labor will follow and therefore lead to a decrease in domestic level of employment (Seidel, 2004). Relative labor costs compared to foreign countries are often a central determinant of vertical direct investments (Buch et al., 2005). Production relocation to subsidiaries in low-wage countries offers great potential for companies to reduce costs (Klodt, 2004).

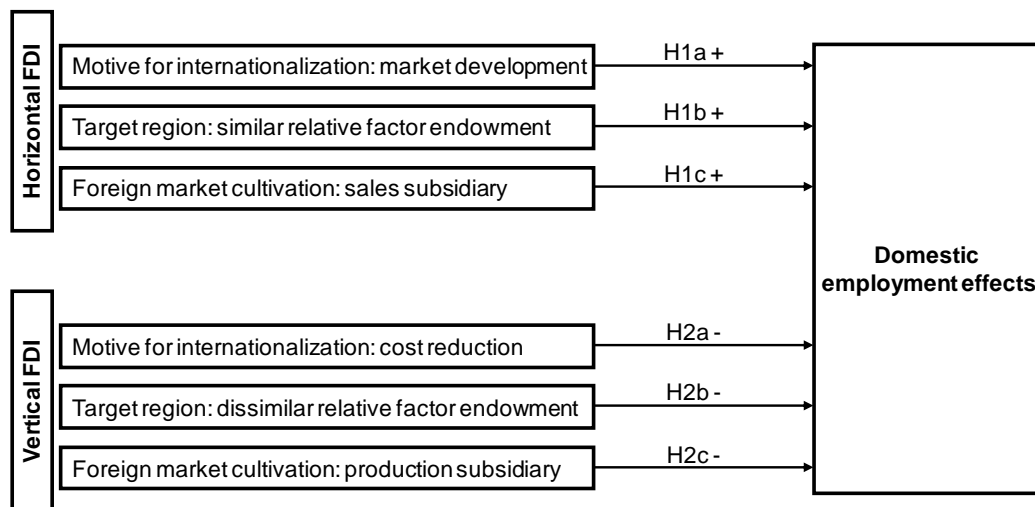
The above considerations concerning cost oriented vertical FDI lead to the following hypotheses:

*Hypothesis 2a: Cost reduction as a motive for internationalization leads to a reduction of employment within the domestic market of the company.*

*Hypothesis 2b: Internationalization towards target regions with dissimilar relative factor endowment compared to Germany leads to a reduction of employment within the domestic market of the company.*

*Hypothesis 2c: Establishment of foreign production subsidiaries leads to a reduction of employment within the domestic market of the company.*

The following figure 1 shows the theoretically derived relations of this paper in a research framework. While horizontal FDI lead to positive effects on domestic employment, vertical FDI cause negative effects. The following chapter tests the validation of the derived hypothesis on the basis of data concerning German medium-sized businesses.



**Figure 1: Research framework**

## **D Empirical analysis**

### **I. Data**

The following empirical analysis identifies determinants of complementary and substitutive employment effects on the domestic market, within the framework of horizontal or rather vertical Foreign Direct Investments of German SMBs. The analysis is based on a repre-

sentative dataset “UnternehmerPerspektiven IV”, which contains data of 4.002 small and medium sized businesses. Data was collected by using a computer-Aided Telephony Inquiry (CATI) technique during the period of June and August 2007. The top executive or rather the owner of the respective SMB was interviewed.

Whereas most present studies concentrate on manufacturing companies, this study is designed on a broader level and also considers service companies. This approach takes into account that the proportion of FDI from manufacturing companies has been decreasing in recent years. Benefited by technological progress of information and communication technologies as well as liberalization of once controlled sectors (e.g. electric supply), the developed gap was bridged through an increasing proportion of FDI by service companies (Andersen & Hainaut, 1998; UNCTAD, 2004). The widely acknowledged definition of German small and medium-sized businesses, established by the “Institut für Mittelstandsforschung” was used for this study. Therefore data of small and medium-sized businesses with up to 500 employees was utilized (Institut für Mittelstandsforschung, 1997). This definition is also accepted by international research (Knight, 2000).

The population (N=4.002) was corrected by eliminating those companies which did not belong to the manufacturing or service sector (n=1.485). Furthermore the remaining sample of companies was reduced by those companies which did not operate on an international level (n=977) or which were active on an international level but employed over 500 employees (n=183) and therefore could not be considered as SMBs according to the aforementioned definition. The utilized sample contained 1.357 companies but was eliminated due to incomplete data (missings). The remaining 1.188 companies represented the dataset used in the study.

## II. Measurement of dependent and independent variables

The dependent variable “domestic employment effects” was modeled as an ordinal measure with three possible categories. The companies were asked how far foreign activities

influenced employment within the domestic market. The three categories represent the effects of internationalization on the employment situation of the surveyed companies (relocation of domestic jobs (1), no effects on domestic jobs (2), extension of domestic jobs (3)).

The independent variable “motive for internationalization: market development” was utilized through multi-item-measurement (Cronbach’s alpha  $\alpha = .715$ ). Questions were adapted from approved scales of determinates of market-driven FDI (Dunning, 1973; Agarwal, 1980; Terpstra & Yu, 1988) and aim at the existence of international customers, increasing international trade of company’s products and services as well as at increasing expectations towards an international presence of the company.

On the basis of the approach of Dunning (1973) and Marin (2004) the independent variable “motive for internationalization: cost reduction” was measured through the question in how far increasing pressure, evoked by higher labor or administrative costs within the domestic market, is a reason for internationalization.

Concerning the target region of internationalization we followed the approach of Buch et al. (2005) and used the approved Grubel-Lloyd-Index (GL) to classify countries with similar or rather dissimilar relative factor endowments compared to the domestic market (Germany). The Grubel-Lloyd-Index measures the ratio between absolute net exports and the sum of exports and imports. This enables to distinguish between countries or rather regions, with bilateral economic activities (thereby countries with similar relative factor endowments) or unilateral activities (thereby countries with dissimilar relative factor endowments). Partner countries with similar relative factor endowment will score a GL value close to 1, for countries with dissimilar relative factor endowment GL will be close to 0 (Grubel & Lloyd, 1971). For the purpose of this study two country indices were formulated on the basis of such a calculation performed by Andersen & Hainaut (1998): “target region: similar relative factor endowment compared to the domestic market”, which in the following includes Western Europe,

Canada and the USA. The index “target region: dissimilar relative factor endowment compared to the domestic market” contains Eastern Europe, India and China.

A feature of horizontal FDI is the establishment of sales subsidiaries for foreign market development, whereas establishment of production subsidiaries is one characteristic of vertical FDI. Both dichotomous independent variables “foreign market cultivation: sales subsidiary” and “foreign market cultivation: production subsidiary” indicate that companies use this type of foreign market cultivation.

Besides the dependent and independent variables control variables, which are of importance in respect of internationalization of small and medium-sized businesses, were integrated. Since internationalization, especially for SMBs, is dependent on resource abilities, we decided to control for the effect of firm size. Here turnover can be considered as proxy for firm size and therefore resource availability. Besides turnover, profitability and the logarithm of firm age were integrated to the model. In order to understand the importance of internationalization for particular companies, foreign share of sales and perceived prospects of their own internationalization were controlled. Finally, further types of foreign market cultivation (export, cooperation, joint venture) were used as control variables.

### III. Method and outcomes

Table 1 represents the bivariate correlations between dependent, independent and control variables. Since none of the bivariate correlations reach the threshold value of 0.7 (Anderson et al., 2002) and the VIF for all independent variables is lower than 2.5, serious problems concerning multi-collinearity can be excluded.

	Mean	SD	VIF	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Domestic employment effects	2,296	0,770		1														
2 Turnover	1,431	0,666	1,113	,037	1													
3 Profitability	4,222	0,817	1,087	,173**	,063*	1												
4 Firm age (log.)	3,366	0,973	1,059	-,036	,151**	-,011	1											
5 Foreign share of sales	2,536	1,322	1,346	,120**	,082**	,099**	,017	1										
6 Perceived prospects of internationalization	4,279	0,884	1,252	,222**	,070*	,239**	-,008	,316**	1									
7 Foreign market cultivation: Export	0,925	0,263	1,048	-,021	,019	-,002	,084**	,110**	,043	1								
8 Foreign market cultivation: Cooperation	0,620	0,486	1,045	,015	,009	-,003	-,016	,056*	,058*	,045	1							
9 Foreign market cultivation: Joint Venture	0,098	0,297	1,152	-,026	,132**	,056*	-,024	,060*	,095**	-,037	,142**	1						
10 Motive for internationalization: Market development	3,584	1,285	1,300	,153**	,079**	,165**	-,075**	,302**	,289**	,081**	,115**	,105**	1					
11 Target region: Similar relative factor endowment	3,352	1,758	1,377	,132**	,110**	,140**	,081**	,365**	,260**	,154**	,113**	,061**	,342**	1				
12 Foreign market cultivation: Sales subsidiary	0,273	0,446	1,324	,061*	,238**	,073**	-,014	,252**	,161**	,013	,045	,256**	,181**	,164**	1			
13 Motive for internationalization: Cost reduction	0,776	0,417	1,034	-,102**	-,029	-,086**	,077**	-,045	-,095**	,079**	-,006	-,017	,017	-,022	-,041	1		
14 Target region: Dissimilar relative factor endowment	2,682	2,330	1,408	,085**	,145**	,140**	,022	,372**	,295**	,105**	,125**	,139**	,347**	,407**	,236**	-,029	1	
15 Foreign market cultivation: Production subsidiary	0,156	0,363	1,233	-,034	,172**	,026	,000	,109**	,082**	-,029	,031	,278**	,114**	,050	,377**	,020	,147**	1
Note: Pearson correlation (bivariate) with pairwise deletion; SD: standard deviation; VIF: Variance Inflation Factor																		
*: p < 0,05; **: p < 0,01																		

**Table 1: Bivariate correlations**

Measurement of the utilized constructs was based on consistent survey techniques (telephone survey) and on a single respondent as data source. Therefore results of this study may be biased as a result of common method bias (CMB) (Podsakoff et al., 2003). Harman's-One-Factor-Test is used to identify the extent of CMB. The basic assumption of this test is that CMB is possible, whenever all utilized variables can be extracted into one factor using exploratory factor analyses or when one factor explains a majority of the covariance between variables (Podsakoff & Organ, 1986; Podsakoff et al., 2003). Principal components analysis with 15 variables indicates that 4 factors are responsible for 45% of variance explanation. Therefore the influence of CMB on results of this study can be excluded.

Since our dependant variable was ordinal, hypotheses were tested through an ordinal logistic regression technique. Even though ordinal variables allow a ranking between the different categories of variables, the span between the different categories cannot be interpreted (Long, 1997). Complementary Log-Log-function was chosen as linking function.

Table 2 shows the results of the final model. Model 1 (“CV”) only includes control variables, whereas model 2 represents the results of the ordinal regression including all variables.

	Model 1 (CV)	Model 2
Turnover	.014	-.007
Profitability	.216***	.196***
Firm age (log.)	-.056	-.037
Foreign share of sales	.090**	.041
Perceived prospects of internationalization	.288***	.240***
Foreign market cultivation: Export	-.197	-.276
Foreign market cultivation: Cooperation	.047	.010
Foreign market cultivation: Joint Venture	-.354**	-.351*
Motive for internationalization: market development		.113**
Target region: similar relative factor endowment		.050(*)
Market cultivation: sales subsidiary		.121
Motive of Internationalization: cost reduction		-.185(*)
Target region: dissimilar relative factor endowment		-.019
Foreign market cultivation: production subsidiary		-.252*
Model $\chi^2$	99.589	121.495
Significance	.000	.000
R <sup>2</sup> (Nagelkerke)	.091	.111
N	1210	1188

Notes: \*\*\*:  $p \leq .001$ ; \*\*:  $p \leq .01$ ; \*:  $p \leq .05$ ; (\*):  $p \leq .1$ .

**Table 2: Results of ordinal regression**

Hypotheses, which were derived from theoretical determinants of complementary employment effects within the framework of horizontal FDI, mostly developed as expected. *Hypothesis 1a*, which posited a positive relationship between new market development, as a motive for internationalization and employment effects, is supported. This finding can be further supported by *hypothesis 1b*, which shows a positive significant relationship between internationalization towards countries with identical relative factor endowment compared to Germany and employment within the domestic market. Solely *hypothesis 1c*, suggesting that foreign

market cultivation by “sales subsidiaries” has a positive influence on domestic employment, is not significant but shows the predicted positive sign.

Concerning the theoretical derived determinants of substitutive employment effects within vertical FDI our expectations seem to be met mostly. As suggested in *hypothesis 2a* there is a significant negative relationship between cost reduction as a motive for internationalization and domestic employment. Hypothesis 2b, suggesting that internationalization towards countries with different relative factor endowment compared to Germany (such as Eastern Europe, China and India) has a negative effect on employment, was not supported but showed the predicted negative sign. In contrast, the predicted negative relationship between establishment of production subsidiaries abroad and domestic employment (*hypothesis 2c*) was supported.

Regarding control variables it can be said, that especially profit situation as well as expected chances of successful internationalization lead to complementary employment effects within the domestic market. Significant negative employment effects in the domestic market can be expected, whenever companies cultivate foreign markets using joint ventures with foreign partners.

## **E Discussion and implications for future research**

The main purpose of this study was to derive and test determinants of complementary and substantive employments effects on domestic market within the scope of Foreign Direct Investments. In this connection we used a sample of international German SMBs, which was collected by TNS Infratest via telephone survey in the context of the study “Unternehmer-Perspektiven” in 2007. Our results provide a differentiated view on determinants of employment effects within internationalization of German SMBs.

Foreign Direct Investments in combination with motives for foreign market development lead to the expected positive employment effects within the domestic market. The same

applies for internationalization towards target regions with identical relative factor endowment compared to Germany. Obviously, sales orientated international activities towards (industrial) countries lead to an additional demand for workforce within the domestic market. Besides the need for input for further goods and services abroad, the need for knowledge intensive Headquarter Services increases.

Within our analysis the establishment of foreign sales subsidiaries had no significant effects on domestic employment. A possible explanation for this finding is that whenever sales subsidiaries are developed a majority of value added activities seems to be created abroad, which in turn leads to reduced domestic employment effects. Furthermore there seems to be no need to absorb additional coordination between subsidiaries and parent companies (Agarwal, 1997) via extension of employment within the domestic market.

Whenever SMBs internationalize in order to reduce costs the predicted relationship occurs and therefore leads to significant reduced domestic employment. This finding can also be supported by significant negative effects of foreign production subsidiaries on domestic employment. This indicates that especially work intensive activities are shifted towards low-wage countries. Our findings correspond with present literature insofar that especially relative labor costs play a central role for vertical direct investments (Buch et al., 2005). Hereby the possibility to reduce costs through relocation of production into low-wage countries is notable (Klodt, 2004).

Referring to target regions of internationalization with dissimilar relative factor endowment compared to Germany the expected negative impact on domestic employment could not be proved. Possibly, FDI are not only used to reduce costs in Central and Eastern Europe but also result from motives of market access, which may lead to dilution of the formulated relationship.

Overall our results demonstrate that a differentiated view of different types of foreign market cultivation is necessary. While exports (as control variable) do not have positive effects on employment in this study, Foreign Direct Investments may lead to substitutive as well as complementary employment effects. Moreover one should not disregard that there is a lack of information concerning domestic employment when Foreign Direct Investments would be absent (Baldwin, 1994). Furthermore substitutive effects might be able to secure employment whenever production relocation is necessary for domestic job retention (Schwarz & Steiner, 2008). In addition this rational supports the relevance of FDI on employment.

Our study corresponds with previous empirical literature, by pointing out that determinants have only a small impact on domestic employment (Molnar, 2007). Even though the model offers a good fit, the explained variance of the dependent variable is low and therefore further variables should be included. From the SMBs point of view networks could be added to the model. Networks enable to establish ties to foreign markets and also allow companies with few resources to overcome barriers of internationalization by exchanging complementary resources within networks (Hara & Kanai, 1994; Kaufmann, 1995).

Identifying determinants of complementary and substitutive employment effects in the context of internationalization is still an interesting research question, which cannot be fully answered. Furthermore information relating to formation of domestic employment is needed. This raises the question whether internationalization leads to a shift in demand of employment from low skilled to highly qualified workforce in connection with corresponding wage growth (Baldwin, 1994; Feenstra & Hanson, 1996; OECD, 2005). Further research should also take the type of reduced or rather created jobs within the domestic market into account.

## Literature

- Agarwal, J. P. (1980): Determinants of Foreign Direct Investment: A Survey, in: *Review of World Economics/Weltwirtschaftliches Archiv*, Vol. 116, No. 4, S. 739-773.
- Agarwal, J. P. (1997): Effect of Foreign Direct Investment on Employment in Home Countries, in: *Transnational Corporations*, Vol. 6, No. 2, S. 1-28.
- Allison, P. D. (1999): *Multiple Regression: A Primer*, Thousand Oaks.
- Andersen, P. S.; Hainaut, P. (1998): Foreign direct investment and employment in the industrial countries, *BIS Working Papers*, No. 61.
- Anderson, D.; Sweeney, D. J.; Williams, T. R. (2002): *Statistics for business and economics*, Mason, Ohio.
- Baird, I. S.; Lyles, M. A.; Orris, J. B. (1994): The choice of international strategies by small businesses, in: *Journal of Small Business Management*, Vol. 32, No. 1, S. 48-59.
- Baldwin, Robert E. (1994): The Effects of Trade and Foreign Direct Investment on Employment and Relative Wages, in: *OECD Economic Studies*, No. 23, S. 7-54.
- Becker, S. O.; Jäckle, R.; Mündler, M.-A. (2005a): Kehren deutsche Firmen ihrer Heimat den Rücken? - Ausländische Direktinvestitionen deutscher Unternehmen, in: *ifo Schnelldienst*, 58. Jg., Nr. 1, S. 23-33.
- Becker, S. O.; Ekholm, K.; Jäckle, R.; Muendler, M.-A. (2005b): Location Choice and Employment Decisions: A Comparison of German and Swedish Multinationals, in: *Review of World Economics*, Vol. 141, No. 4, S. 693-731.
- Braconier, H.; Ekholm, K. (2000): Swedish Multinationals and Competition from High- and Low-Wage Locations, in: *Review of International Economics*, No 3, Vol. 8, S. 448-461.
- Brainard, L. S. (1993): A Simple Theory of Multinational Corporations and Trade with a Trade-Off Between Proximity and Concentration, *NBER Working Papers*, No. 4269.
- Brainard, L. S. (1997): An Empirical Assessment of the Proximity-Concentration Trade-Off Between Multinational Sales and Trade, in: *American Economic Review*, Vol. 87, No. 4, S. 520-544.
- Brainard, L. S.; Riker, D. A. (1997): Are U.S. Multinationals Exporting U.S. Jobs?, *NBER Working Papers*, No. 5958.
- Brouthers, K. D.; Nakos, G. (2004): SME Entry Mode Choice and Performance: A Transaction Cost Perspective, in: *Entrepreneurship: Theory & Practice*, Vol. 28, No. 3, S. 229-247.
- Buch, C. M.; Kleinert, J.; Lipponer, A.; Toubal, F. (2005): Determinants and effects of foreign direct investment: evidence from German firm-level data, in: *Economic Policy*, Vol. 20, No. 41, S. 52-110.
- Calof, J. L. (1994): The Relationship between Firm Size and Export Behavior Revisited, in: *Journal of International Business Studies*, Vol. 25, No. 2, S. 367-387.
- Carr, D. L.; Markusen, J. R.; Maskus, K. E. (2001): Estimating The Knowledge-Capital Model of the Multinational Enterprise, in: *American Economic Review*, Vol. 91, No. 3, S. 693-708.
- Castellani, D.; Mariotti, I.; Piscitello, L. (2008): The impact of outward investments on parent company's employment and skill composition. Evidence from the Italian case, in: *Structural Change and Economic Dynamics*, No. 1, Vol. 19, S. 81-94.
- Caves, R. E. (1971): International Corporations: The Industrial Economics of Foreign Investment, in: *Economica*, Vol. 38, No. 149, S. 1-27.
- Coviello, N. E.; McAuley, A. (1999): Internationalisation and the Smaller Firm: A Review of Contemporary Empirical Research, in: *Management International Review*, Vol. 39, No. 3, S. 223-256.
- Davidson, W. H. (1980): The Location of Foreign Direct Investment Activity: Country Characteristics and Experience Effects, in: *Journal of International Business Studies*, Vol. 11, No. 2, S. 9-22.
- Desai, M. A.; Foley, C. F.; Hines jr., J. R. (2005): Foreign Direct Investment and Domestic Economic Activity, in: *NBER Working Papers*, No. 11717.
- Deutsche Bundesbank (2006): Die deutschen Direktinvestitionsbeziehungen mit dem Ausland: neuere Entwicklungstendenzen und makroökonomische Auswirkungen, in: *Monatsbericht* September 2006, S. 45-61.

- DIHK (2006): *Going International – Erfolgsfaktoren im Auslandsgeschäft*, Berlin.
- Dunning, J. H. (1973): The Determinants of International Production, in: *Oxford Economic Papers*, Vol. 25, No. 3, S. 289-336.
- Ekholm, K.; Forslid, R.; Markusen, J. R. (2007): Export-Platform Foreign Direct Investment, in: *Journal of the European Economic Association*, Vol. 5, No. 4, S. 776-795.
- Erramilli, M. K.; D'Souza, D. E. (1993): Venturing into Foreign Markets: The Case of the Small Service Firm, in: *Entrepreneurship: Theory & Practice*, Vol. 17, No. 4, S. 29-41.
- Etemad, H. (2004): Internationalization of Small and Medium-sized Enterprises: A Grounded Theoretical Framework and an Overview, in: *Canadian Journal of Administrative Sciences*, Vol. 21, No. 1, S. 1-21.
- Feenstra, R. C.; Hanson, G. H. (1996): Globalization, Outsourcing, and Wage Inequality, in: *American Economic Review*, Vol. 86, No. 2, S. 240-245.
- Graham, E. (1995): Foreign Direct Investment in the World Economy, IMF Working Paper, No. 95/59.
- Grubel, H. G.; Lloyd, P. J. (1971): The Empirical Measurement of Intra-Industry Trade, in: *Economic Record*, Vol. 47, No. 120, S. 494-517.
- Hanson, G.H.; Mataloni, R. J.; Slaughter, M. J. (2003): Expansion Abroad and the Domestic Operations of U.S. Multinational Firms, mimeo.
- Hara, G.; Kanai, T. (1994): Entrepreneurial Networks Across Oceans to Promote International Strategic Alliances for Small Businesses, in: *Journal of Business Venturing*, Vol. 9, No. 6, S. 489-507.
- Hardock, P. (2000): *Produktionsverlagerung von Industrieunternehmen ins Ausland: Formen, Determinanten, Wirkung*, Wiesbaden.
- Harrison, A. E.; McMillan, M. S.; Null, C. (2007): U.S. Multinational Activity Abroad and U.S. Jobs: Substitutes or Complements, in: *Industrial Relations*, No. 2, Vol. 46, S. 347-365.
- Helpman, E. (1984): A Simple Theory of International Trade with Multinational Corporations, in: *Journal of Political Economy*, Vol. 92, No. 3, S. 451-471.
- Helpman, E.; Krugman, P. R. (1985): *Market Structure and Foreign Trade*, MIT Press, Cambridge, MA.
- Helpman, E.; Melitz, M. J.; Yeaple, S. R. (2004): Export Versus FDI with Heterogeneous Firms, in: *American Economic Review*, Vol. 94, No. 1, S. 300-316.
- Hoekman, B.; Winters, A. L. (2005): Trade and Employment: Stylized Facts and Research Findings, in: *DESA Working Paper*, No. 7.
- Hummels, D. L.; Stern, R. M. (1994): Evolving patterns of North American merchandise trade and foreign direct investment, 1960-1990, in: *World Economy*, Vol. 17, No. 1, S. 5-29.
- Institut für Mittelstandsforschung (1997): *Unternehmensgrößenstatistik 1997/98*, Bonn.
- Kaufmann, F. (1995): Internationalisation Via Co-Operation - Strategies of SME, in: *International Small Business Journal*, Vol. 13, No. 2, S. 27-33.
- KfW/IKB (2004): *Studie zu den Auslandsaktivitäten deutscher Unternehmen: Beschäftigungseffekte und Folgen für den Standort Deutschland*, Frankfurt / Main.
- Kletzer, L. G. (2002): Imports, exports, and jobs. What does trade mean for employment and job loss, Kalamazoo, Michigan.
- Kletzer, L. G. (2004): Trade-related Job Loss and Wage Insurance: a Synthetic Review, in: *Review of International Economics*, Vol. 12, No. 5, S. 724-748.
- Klodt, H. (2004): Mehr Arbeitsplätze durch Auslandsinvestitionen, in: *Die Weltwirtschaft*, Vol. 55, Nr. 4, S. 373-389.
- Knight, G. (2000): Entrepreneurship and Marketing Strategy: The SME Under Globalization, in: *Journal of International Marketing*, Vol. 8, No. 2, S. 12-32.
- Konings, J.; Murphy, A. P. (2006): Do Multinational Enterprises Relocate Employment to Low-Wage Regions? Evidence from European Multinationals, in: *Review of World Economics*, No. 2, Vol. 142, S. 267-286.
- Long, J. S. (1997): *Regression models for categorical and limited dependent variables*, Thousand Oaks.

- Marin, D. (2004): A Nation of Poets and Thinkers - Less So with Eastern Enlargement? Austria and Germany, CEPR Discussion Paper.
- Molnar, M.; Pain, N.; Taglioni, D. (2007): The Internationalisation of Production, International Outsourcing and Employment in the OECD, in: OECD Economic Department Working Papers, No. 561.
- OECD (2005): Trade-adjustment Costs in OECD Labour Markets: A Mountain or a Molehill, in: OECD Employment Outlook, S. 23-72.
- Podsakoff, P. M.; Organ, D. W. (1986): Self-Reports in Organizational Research: Problems and Prospects, in: Journal of Management, Vol. 12, No. 4, S. 531-544.
- Podsakoff, P. M.; MacKenzie, S. B.; Lee, J.-Y.; Podsakoff, N. P. (2003): Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies, in: Journal of Applied Psychology, Vol. 88, No. 5, S. 879-903.
- Schwarz, P.; Steiner, T. (2008): Direktinvestitionen im Ausland: Motive sowie Auswirkungen auf den inländischen Arbeitsmarkt, in: Zeitschrift für Betriebswirtschaft, 78. Jg., Nr. 9, S. 901-922.
- Seidel, T. (2004): Globalisierung und Arbeitsmärkte: Welche Auswirkungen haben Standortverlagerungen für Deutschland, in: ifo Dresden berichtet, Nr. 5, S. 23-28.
- Shuman, J. C.; Seeger, J. A. (1986): The Theory and Practice of Strategic Management in Smaller Rapid Growth Firms, in: American Journal of Small Business, Vol. 11, No. 1, S. 7-18.
- Terpstra, V.; Yu, C.-M. (1988): Determinants of Foreign Investment of U.S. Advertising Agencies, in: Journal of International Business Studies, Vol. 19, No. 1, S. 33-46.
- UNCTAD (2004): World Investment Report 2004: The Shift Towards Services.
- van Hoorn, T. P. (1979): Strategic Planning in Small and Medium-sized Companies, in: Long Range Planning, Vol. 12, No. 2, S. 84-91.
- Zacharakis, A. L. (1997): Entrepreneurial Entry Into Foreign Markets: A Transaction Cost Perspective, in: Entrepreneurship: Theory & Practice, Vol. 21, No. 3, S. 23-39.