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Foreign-owned Firms in the German Labour Market

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ABSTRACT

Compared to other Western European countries, Germany was less successful in attracting FDI in the 1990s. The falling behind in inward-FDI should be no problem if foreign-owned firms (FoFs) were only substitutes for indigenous firms. However, to the extent they differ significantly in terms of performance and structure, FoFs could be an interesting target group of economic policy. We empirically test three hypotheses: FoFs enjoy a productivity advantage over purely nationally operating firms but not – or less so - over multinationals headquartered in Germany (H1). The demand for qualified labour is higher in FoFs compared to German firms (H2). FoFs show a more flexible conduct on the labour market than German-owned firms; they are less integrated in the traditional national labour market system (H3). Our analysis is based on the establishment panel of the Nuremberg Institute for Employment Research (IAB). The data largely support H1 and H2, whereas there is hardly evidence of a particular flexibility in the FoFs' conduct on the labour market.

Keywords: Multinational firms, Labour force and employment

JEL code: F230, J210

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1 INTRODUCTION#

Compared to other Western European countries, Germany was less successful in attracting FDI in the 1990s. According to the latest figures available (Deutsche Bundesbank 2002), foreign-owned firms (FoFs) had about two million employees as of the end of 2000, over half of them in manufacturing. As a share of domestic manufacturing, the importance of FoFs is to be considered average (table 1). However, in view of size and purchasing power of the market and the central location in Europe, a clearly above-average position could have been expected.

Falling behind in inward-FDI should be no problem for economic policy if FoFs were only substitutes for indigenous firms. To the extent they differ significantly in terms of performance and structure, FoFs would, however, be an interesting target group. Information on causes and implications of (possible) differences between "purely" German and foreign-owned firms could be used in policy measures aimed at influencing FDI. In case of a positive assessment of income and employment effects, arguments could be developed for promotion of inward-FDI. If foreign ownership does not play any role in the performance of the firm, the gap in inward-FDI is irrelevant for policy. It can, at all events, be taken as an indicator of lack of investment in general.

Contrary to countries like the UK, France, or the USA[1], (possible) particularities of FoFs have been rarely investigated in Germany. In the following, we focus on the situation in Germany. We deal with the question whether FoFs show certain characteristics in the labour market and, thereby, influence income and employment in Germany. This is one aspect of the often discussed issue "Does ownership matter?" (*Mason/Encarnation* 1994). We focus on two issues of particular relevance.

- Do FoFs achieve productivity advantages over indigenous firms? This issue is of relevance for their position in the labour market since productivity is an important determinant of wages and employment.

This paper is largely based on a HWWA study on the role of foreign-owned firms in the national labour market (*Borrmann/Jungnickel/Keller* 2002).

1 An overview of studies available can be found in *Pfaffermayr/Bellak* 2002.

- Do FoFs display characteristic patterns in Industrial Relations (IR) and Human Resources Management (HRM) and does their employment record differ from the German average?

Conclusions regarding the effects of FoFs on the German labour market can be drawn from the answers to these questions.

Table 1: Share of foreign-owned firms in the manufacturing sector of selected countries[a]

	1985		1990		1998	
Host country	**Sales**	**No. employed**	**Sales**	**No. employed**	**Sales**	**No. employed**
Germany	26	16	26	17	25	16
France	27	21	28	24	36[b]	30[b]
UK[b]	19	15	25	16	33	19[c]
Italy[b]	17	14	14	10	12[c]	9[c]
Belgium					35[g]	27[g]
The Netherlands	39	15	33	19	47[d]	19[d]
USA		7	15	11	15	14
Japan[b]	4,6	1,6	2,4	1,1	1,2[c]	0,8[c]

a Sales and employment in % of the respective values for total manufacturing; **b** Majority holdings only; **c** 1996; **d** 1994; **e** 1995; **f** 1996; **g** 1997
Sources: OECD (1999); UNCTAD (1999); *Sessi* (2000); *Lallement* (2002); *Zhang/ v.d. Bulcke* (2000); Deutsche Bundesbank; Statistisches Bundesamt; authors' calculation

2 HYPOTHESES

Starting point for the development of our hypotheses are established theories of FDI.[2] Although the various theoretical approaches differ in terms of naming and weighting the explanatory variables, they generally consider the exploitation or development of company-specific competitiveness, or advantage as a core determinant for FDI. The FDI comes about if this advantage can be more fully utilised, or developed, by expansion

2 *Dunning* (1980) often considered to have developed the basic explanation of FDI, refers to the interplay of ownership specific factors (O-factors), internalisation factors (I-factors) and location specific factors (L-factors) as a condition for FDI to come about. Later, other authors further differentiated this supposition and partly integrated the OLI factors into general equilibrium models. Examples are *Helpman/Krugman* (1990), *Ethier* (1986), and *Markusen* (1998).

abroad compared with domestic production and exports only. "OwnershipAdvantage" in Dunning's terminology is equivalent to *Markusen's* (1998) „Knowledge Capital“.

Competitive strength can result from technological or organisational advantages or from realisation of scale economies in intra-company services such as research & development. FDI can, therefore, not only be interpreted as a transfer of financial capital from a parent company to the foreign subsidiary (not even being a necessary component of FDI). It is rather a transfer of those factors that make up the competitive strength of the investing company.[3] Since these factors are of a public goods character in a multinational firm (*Caves* 1996), their use in foreign subsidiaries does not impair the domestic use. On the contrary, the additional use in foreign countries broadens the basis for development and strengthening of such advantages.

Taking existence and transfer of O-factors as a constitutive element of FDI, companies investing abroad are among the most competitive and productive ones. Furthermore, it can be assumed that also their foreign subsidiaries show a productivity advantage over "purely" national firms of the host country since they can profit from the competitive strength transferred by the investing firm.[4] This can be named "foreign ownership factor" (*Davies/Lyons* 1991). Otherwise it could not be understood, why, for example, German firms had not taken the investment opportunities now realised by foreign investors. (*Barrell/Pain* 1999, p. 35).

Our general assumption that FoFs achieve a productivity advantage over national firms needs some qualification. If FoFs achieve a high productivity level as a consequence of transfers from the parent company or from other companies of the investor´s group, or from the mutual exchange of proprietary knowledge, it cannot be assumed that the subsidiaries are more productive than the parent company. It should rather be the other way round. This means that the superiority of foreign-owned firms can only be assumed over indigenous firms that are not part of a multinational network (*Doms/Jensen* 1998). Why should, for example, Ford and Opel in Germany be more productive than Daimler, BMW and Volkswagen? The more internationalized the host country firms and

3 "It took little staring at available statistics to realize that viewing direct investment as a capital flow was largely a mistake" (*Markusen* 2001, p. 5).

4 This interrelation even holds generally. Empirical investigations have found that the productivity of a plant is positively related to the productivity of the parent company (*Bartelsman/Doms* 2000). Highly competitive firms will be best in a position to impart their knowledge to the various plants (*Baily* et al. 1993).

economy are, the smaller would be the productivity advantage of FoFs. *Doms* and *Jensen* (1998, pp. 245) show that domestic multinationals in the USA even are in the lead compared to FoFs which, in their turn, operate with clearly higher productivity than domestic firms with no foreign assets. The first thesis of our paper therefore reads

H1 *FOFs in Germany enjoy a productivity advantage over firms operating only nationally, but not – or less so - over multinationals headquartered in Germany.*

Two arguments may be put forward against our hypothesis:

- It may be doubted that "high productivity" operations means the same in the context of the investing firm and compared to standards of the host country (*Doms/Jensen* 1998b), in our case Germany. Intra-firm division of labour could leave high-productivity activities in the home country while low-value added activities are relocated abroad (*Dunning* 1993). Although it seems implausible that foreign investors operate at low productivity in high-income Germany, the relative position of FoFs ultimately remains an empirical question.

- Much of FDI is realised by way of mergers and acquisitions (M&A). True, this cannot simply be regarded as a change of ownership with no influence on the performance of the firm acquired. Contrary to that, the foreign investor should aim at improving the performance in order to pay a premium to the former owner. However, experience shows that a large share of M&A turns out to be a failure (*Dickerson* et al. 1997, *Kleinert/Klodt* 2002). This would hold in particular if the aim was "empire building" (*Bartelsman/Doms* 2000, p. 587) rather than efficiency gains. There are studies even showing that foreign affiliates can be a burden to the investing company.[5] Therefore, it is not self-evident that FoFs in Germany achieve superior productivity.

While these points cannot generally be rejected, they do not seem to be fundamental arguments against *H1*. They rather show that relative productivity of FoFs is largely an empirical question. However, the dominance of M&A leads to another question which is important for the interpretation of the results: Can a productivity advantage on the part of FoFs, in fact, be traced back to the change of ownership to a foreign investor? If

5 See, e.g. "Tochtergesellschaften schwächen Unternehmenswert", in: FAZ of 31.10.2001 and "Multinationals making lower profits abroad", in: FT of 27.4.2000.

the investors follow "picking-the-winner" strategies, the causality may as well be the other way round: FoFs in Germany are highly productive not because of foreign ownership, they rather get into foreign ownership because of their high productivity from which the investor aims to profit at other locations. Such interpretation problems could be aggravated by a change of internationalization strategies from traditional market strategies towards asset seeking (*Dunning* 1998, *Borrmann* et al. 2001).

Best conditions for the development of firm-specific competitive advantages and for their border-crossing intra-firm spread are in knowledge-intensive industries that have a high share of qualified employees. Even if FoFs had no higher productivity compared to German firms of the same sector, they could, therefore, be supposed to have an advantage over the average of German firms because of their above-average weight in high-productivity sectors. Also, the absorption of the parent company's know how often depends on the use of highly qualified specialists. This leads to our second hypothesis

H2 The demand for qualified labour is higher in FoFs compared to German firms

Also, labour market strategies of FoFs can differ from the strategies of German firms. The concept of "labour market strategies" is conceived here in a rather broad sense. It comprises the stability of employment as well as industrial relations (IR) and human resources management (HRM) strategies. With regard to IR and HRM a number of theoretical and empirical studies discuss the conditions relevant for the development of respective strategies of multinationals.[6] Both cultural, institutional and firm-specific factors are to be taken into account. These factors can have differing implications on firm strategies which will finally be shaped according to costs and returns of the various options (*Schmitt/Sadowski* 2001). In the following, we assume a labour market conduct along the following hypothesis:

H3 FoFs show a more flexible conduct on the labour market than German-owned firms; they are less integrated in the traditional national labour market system.

This hypothesis can be based on several arguments:

6 Overviews can be found in *Schmitt/Sadowski* (2001) and *Peters* (2001).

- Multinationals are strongly influenced by labour market regulation and conduct in their home country (*Ruigrok/v.Tulder* 1995). They tend, therefore, to transfer the routines from home to foreign affiliates.

- Company-wide targets regarding productivity and profitability can lead to behaviour differing from the one prevailing in Germany.

- Further strategic pressure can result from the policy to lower costs of intra-firm border-crossing division of labour. In particular, the pan-European integration of production can demand standardised IR strategies of affiliates in the various countries. FoFs located in Germany would then adopt more flexible employment policies according to firm-specific circumstances.

These factors could, for example, lead to a preference for in-house agreements on tariffs and more flexible arrangements of labour relations as opposed to the rather general agreements common in Germany which do not meet the demands of international competition. For example, one could expect more profit participation at the expense of fixed payment, more labour contracts limited in time, more overtime hours and, generally, higher fluctuation in labour force.

Nevertheless, a number of arguments lead to a certain qualification of the flexibility hypothesis.

- Strict labour market regulations in Germany could leave little room for firm-specific arrangements (*Peppard/Fitzgerald* 1997).

- Adjustment to the German regulation and practice may, on the one hand, lead to costs in intra-group border-crossing transactions. On the other hand, it could save costs and be advantageous to transactions with German institutions, employees and business partners (*Ackermann/Pohl* 1989).

- The high share of M&A and the fact that many FoFs have existed in Germany for a long time could facilitate adjustment and lead to labour market conduct not too different from that of German firms. Insofar, participation in the relatively centralised wage negotiations can be expected (OECD 1997, p. 71).

- Labour market systems of continental European countries often are not so fundamentally different from the German ones. Investors from these countries (more than half of total FDI) could display a conduct not so different from German firms.

The labour market conduct of FoFs could, therefore, be expected in practice not to differ from German-owned firms in all respects. Eventually, the extent of any differences and hence the validity of our *H3* remains an empirical question.

3 DATABASE AND METHODOLOGY

The empirical testing of our hypotheses is largely based on the establishment panel of the Nuremberg Institute for Employment Research (IAB)[7]. The panel is made up of almost 14,000 establishments. More than 8,000 of them are located in West Germany which our analysis is confined to (Bellmann 2002). Panel participants are mostly from the services sector and the bulk is small and medium sized. The following analysis is limited in three ways:

- Since the relative position of FoFs can be supposed to depend, among others, on the degree of multinationalization of the host economy, we can assume that differences between FoFs and German-owned firms are bigger in East than in West Germany. In order not to blur these differences, we confine our analysis to West Germany.[8]

- We focus our interest on manufacturing. The reason is that our core variable, productivity, often cannot be calculated and interpreted meaningfully in services given the heterogeneity in this sector.

- We confine our analysis to establishments with more than 50 employees in order to exclude firms that mainly serve as distribution outlets for manufacturing firms.

Following this demarcation, about 1 500 observations enter our calculations for the year 2001. Using this unique and rather broad micro foundation, we can take into account the

7 In the following, the term "firm" is used here interchangeably with the term "establishment" which would, strictly speaking, be correct.

8 An analysis of the productivity of FoFs in East Germany can be found in *Bellmann/ Ellguth/Jungnickel* (2002).

heterogeneity of the firms with regard to a number of characteristics not available in the aggregate data of Deutsche Bundesbank.

The test of our hypotheses requires an identification of both FoFs and adequate groups of establishments for comparison. In principle, the identification of FoFs poses no problem since ownership is asked for in the survey. However, this question was only asked in the last two waves so that we could have a panel only on the assumption that ownership in previous years is the same as in the year 2000. One would, however, end up with substantially fewer cases as the survey was significantly smaller in previous years. An annual "panel mortality" of up to 30 % has to be taken into account. We, therefore, largely use cross-sectional data of the last two years covered.

A certain problem arises from the definition of German-owned multinationals since meaningful information on outward FDI is not available. Hence, we use a concept of multinationality based on export business instead. Export data are readily available. We define "Multinationals" as establishments with at least 30 % sales in foreign countries. Therefore, establishments with less exports or no export at all are called "nationally oriented". This concept seems to be justifiable since export oriented firms should be under pressure of international competition to a similar extent as firms internationalised by way of FDI. These two ways of doing business internationally are often complements. Furthermore, exporting firms can, in principle, realise scale economies in headquarter services and production to a similar extent as "real" multinationals.

Concerning the productivity issue (*H1*), the special features of FoFs are first analysed in comparison with German-owned nationally and internationally oriented firms. Beyond that, multiple regressions are run in order to assess the role of foreign ownership for productivity when other factors of influence are controlled for. Furthermore, the relationship between the independent variables has to be taken into account. For example, not only can foreign ownership influence productivity directly, but also in an indirect way via structural characteristics (such as sectoral affiliation and size) and via increased input of qualified labour or capital. To the extent that these factors are influenced by foreign ownership, they can no longer be considered as exogenous. We, therefore, also explore the relationship between foreign ownership and further determinants of productivity in order to include these more indirect modes of influence.

Productivity is defined as value added per employee. Additionally, we use turnover per employee. Although the value added based indicator is far better suited for our purpose, the turnover based indicator has its own advantage as more information is available on turnover than on value added. Wage per employee is used as a proxy for human capital intensity while the average of investments per employee in 1999 and 2000 is taken as a proxy for real capital intensity. Capacity utilisation and technological level were assessed by the firms themselves using a scale of one to five.

Our hypotheses concerning the employment of qualified labour (*H2*) and the supposed flexibility in the labour market conduct of FoFs (*H3*) are dealt with by multiple regressions and by direct comparison of the various groups of establishments.

4 EVIDENCE: PRODUCTIVITY ADVANTAGES OF FoFs?

4.1 Overview

A first processing of the survey data largely yields the expected results for our hypothesis *H1* (table 2):

- FoFs in West Germany achieve a clear productivity advantage over the average German firms. They can, therefore, be considered as especially competitive employers.

- German multinationals rank second in the productivity hierarchy. They achieve a higher productivity than firms operating on a national scale only. This also conforms with our expectation that the FoFs' advantages over indigenous multinationals (parent companies) is lower.

On the other hand, the data displayed in table 2 show that much of the results depend on the methods applied. When the value added and the employment figures are extrapolated on the basis of factors given by the surveying institution (Infratest Burke), the FoFs' advantage over German-owned multinationals is much smaller than if non-

extrapolated means are used.[9] Then, the productivity difference between FoFs and German multinationals is surprisingly small.

Table 2: Productivity[a] in West German manufacturing establishments, 2000

	extrapolated		mean, not extrapolated	
establishments	**Value (1000DM)**	**Index[b]**	**Value (1000DM)**	**Index[b]**
German, national	139,000	70	132,237	61
German, multinational (Exportquota>30%)	187,221	94	162,520	75
Foreign-owned	199,602	100	216,667	100
total	164,955	83	156,152	72

a Value added per employee in DM 1000; establishments with 50+ employees; **b** foreign-owned firms = 100
Source: IAB establishment panel; own computations

4.2 Foreign ownership versus other influencing factors

If foreign owned firms enjoy higher productivity, this will not necessarily mean that there is a causal relation of foreign ownership on productivity. There are further determinants of productivity as well as interactions between these independent variables which have to be taken into account. If indirect influences of foreign ownership on productivity were neglected, the role of foreign ownership would be underestimated.

In order to estimate the influence of foreign ownership, we first compute multiple regressions on productivity. We control for size of establishments (number of employees), sector, input of production factors (human and real capital), capacity utilisation and technology level as well as the share of part time employees, secondary employment and unskilled labour. We expect positive regression coefficients for all these independent variables except the share of part-time employees, secondary employment and unskilled labour. In addition, we include the export quota (exports in per cent of sales). This variable can, according to our definition, be considered an indicator of multinationality of German firms. Thereby, we expect to receive evidence

9 Another interesting feature shown by *Bellmann/Ellguth/Jungnickel* 2002 is strong heterogeneity of both German-owned and foreign-owned groups of firms. In both groups, there are establishments with very low as well as with extraordinarily high productivity. This leads to the supposition that productivity differences are to a large extent a matter of sector and firm specific characteristics.

concerning our hypothesis *H1* that foreign-owned firms' productivity advantage is smaller or non-existent versus German multinationals.

The results of our regressions are shown in table 3. Apart from the technology level, all coefficients display the correct sign. Nearly all independent variables are highly significant. The result shows that even when controlling for a multitude of variables there remains a positive correlation between foreign ownership and productivity. This means: Ownership matters. The export variable has the expected positive sign. Multinationality (defined by export quota) thus goes along with higher productivity. This means: The FoFs advantage over German multinationals is smaller compared to the advantage over non-multinationals or even non-existent. Respective computations confined to FoFs and German multinationals show that even then, there is significant positive correlation of foreign ownership and productivity (*Borrmann/Jungnickel/Keller* 2003, p. 60). Taken together with our computations shown in Table 3, we can therefore conclude that FoFs achieve a productivity advantage even over German multinationals, although it is smaller.

Table 3: Determinants of productivity - regression estimates

	productivity based on value added		**productivity based on turnover**	
	regress.-coeff	**beta-coeff.**	**regress.-coeff.**	**beta-coeff.**
intersection with y axis	8.96***(12.75)		9.79***(17.53)	
foreign ownership dummy (FO)	0.13**(2.06)	0.07	0.24***(4.88)	0.14
number of employees	0.00**(2.05)	0.15	-0.00***(3.09)	0.19
(number of employees)^2	-0.00 (-1.36)	-0.09	-4.46**(-2.33)	-0.13
investment per employee	0.00***(4.37)	0.14	0.00***(7.15)	0.19
wage per employee	0.39***(4.80)	0.19	0.41***(6.36)	0.22
export quota[a]	0.00*(1.92)	0.07	0.00***(5.20)	0.16
level of technology	0.03 (0.56)	0.02	0.02***(0.47)	0.01
share of part-time employees	-0.01***(-3.50)	-0.16	-0.01***(-4.23)	-0.16
share of secondary employment	-0.01**(-2.32)	-0.11	-0.01***(-3.95)	-0.15
share of unskilled labour	-0.00 (-1.23)	-0.04	-0.00 (-0.16)	-0.01
capacity utilisation	-0.02 (-0.49)	-0.02	-0.03 (-0.88)	-0.02
17 sector dummies	yes		yes	
R^2 adjusted	0.29		0.43	
Number of cases	788		852	

a relation of exports to turnover
Source: Own computations, based upon IAB establishment panel

More detailed information on the relationship between productivity and foreign ownership, in general can be received by estimating a production function. Unlike in the regressions shown in table 3, some services sectors are included in these calculations. The regression equation runs as follows:

$$\ln VA = C + C1 + \alpha \ln L + \beta \ln Cap + \Sigma Bi + \varepsilon$$

VA	Value added
L	Input of labour (number of employees in 2000)
Cap	Input of capital (investment per employee in 1999 and 2000)
C1	Dummy variable for foreign ownership
Bi	Dummy variable for sector i
ε	Error term

Coefficients α and β represent production elasticities of labour and capital. German-controlled firms build the referential system for the FoFs. Respective coefficients have, therefore, not been computed separately. The intersection with the y-axis C can be interpreted as total factor productivity. C_1 measures the difference in total factor productivity between FoFs and the reference group of establishments. The results displayed in table 4 show that FoFs achieve a significantly higher total factor productivity than German-controlled firms.

Table 4: Estimation of a Cobb-Douglas-type production function[a]

intersection with y axis **b**	9,35***(39,60)
foreign ownership dummy (FO)	0,18***(2,70)
input of labour (production elasticity of labour)	0,91***(26,06)
input of capital (production elasticity of capital)	0,18***(8,4)
17 sectoral dummies	yes
R^2 adjusted	0,80
Number of cases	818

a The table shows regression coefficients, t-values in brackets, Level of significance: * < 0,1; ** < 0,05; *** < 0,01; b indicator for total factor productivity, **c** interaction variables
Source: Computed on the basis of data of the IAB establishment panel

5 EVIDENCE: HIGH INPUT OF QUALIFIED LABOUR?

Qualification of labour is represented in the following by wage per employee. We assume that labour is more qualified the higher wages are. Our Hypothesis *H2* that FoFs employ particularly qualified labour would, therefore, be supported if they paid above-average wages. Evidence available elsewhere (*Borrmann/Jungnickel/Keller* 2002) indeed shows that the probability of being foreign-owned in Germany is related significantly positive to wages. Similar evidence was produced with regard to various other countries (*Pfaffermayr/Bellak* 2002).

The evidence displayed in table 5 goes beyond what is known from other studies. It first quantifies the advantage of FoFs in both West and East Germany at about 20 % over purely national firms, whereas there is virtually no difference versus German multinationals. Further interesting insights can be gained from differentiating the average pay by size classes. In fact, wages generally increase with the size of a firm. However, this increase is much stronger in nationally oriented German firms than in FoFs. The largest FoFs even pay below average. If we assume that smaller size goes along with a high share of greenfield ventures whereas bigger FoFs largely are long-established acquisitions, it can be concluded that in particular new ventures employ highly qualified labour.

Table 5: Wages per employee[a] in German manufacturing establishments (DM and index, FoFs=100)

Establishments	**...in West Germany**				**...in East Germany**			
	Foreign-owned		**German-owned**		**Foreign-owned**		**German-owned**	
			nationally oriented	**Interna-tionally oriented**			**nationally oriented**	**Interna-tionally oriented**
No. employees	**DM**		**Index**	**Index**	**DM**	**Index**	**Index**	**Index**
50-99	6.146	100	69	83	4.965	100	62	76
100-199	5.697	100	64	87	4.019	100	85	92
200-499	5.457	100	83	99	4.471	100	77	84
500-999	5.610	100	92	95	4.233	100	112	110
1000-4999	5.428	100	104	101	.	100	.	.
>= 5000	6.937	100	125	88	.	100	.	.
total manufact.	**5.681**	**100**	**79**	**96**	**4.279**		**78**	**99**

a extrapolated values in DM
Source: Computed on the basis of data of the IAB establishment panel

The wage levels of German multinationals in various size classes resemble those of FoFs rather than those of domestic firms. This evidence is supported by regression estimates displayed in table 6. On the one hand, foreign ownership is significantly positive in relation to wage level even when other factors are controlled for (model I). On the other hand, the foreign ownership dummy is no longer significant when the German comparison group is restricted to the multinationals (model II).

We can, therefore, conclude that foreign ownership does not only influence productivity in a direct way, but also indirectly via hiring of qualified labour. This indirect influence cannot only be traced back to foreign ownership, but in general to the integration into an international business network.

Table 6: Foreign ownership and wages in German manufacturing - Regressions estimates[a]

Dependent variable / Independent variable	Wages per employee (log) I	Wages per employee (log) II
foreign ownership (yes= 1)	0.08**(3.5)	0.06 (1.7)
no. employees	0.09**(3.6)	0.09*(2.3)
West/East Germany (West=1, Ost= 0)	0.31**(12.4)	0.25**(6.1)
export quota	0.09**(3.7)	0.11**(2.9)
investment per employee	0.11**(4.8)	0.11**(2.9)
technological level of machinery	0.04 (1.8)	0.01 (0.3)
proportion part-time employees	-0.18**(-7.3)	-0.07 (-1.8)
15 sectoral dummies	yes	yes
Adjusted R^2	0.25	0.21
No. observations	1524	622

a Standardised regression coefficients, (t-values); * (**) Significance α = 0,05 (0,01);
I all establishments with +50 employees; **II** foreign-owned and internationally oriented German-owned firms included
Source: Computed on the basis of data of the IAB establishment panel

6 FLEXIBLE CONDUCT ON THE LABOUR MARKET?

In the following, we examine our hypothesis *H3* stating that FoFs practice more flexible labour market conduct than national firms. This thesis was founded on two arguments: The first argument was the pressure on multinationals to adjust flexibly to changing conditions in international competition. The second argument was that multinationals, in order to avoid internal transaction costs, tend to prefer patterns of conduct they are accustomed to from their home country.

The labour market conduct of FoFs has two aspects:

- First, one could ask whether the need for flexibility on the side of the firms is reconcilable with the legal and administrative framework and with business practice in Germany. If both does not coincide, the firms could refrain from investing in Germany from the outset and invest in other European locations instead. The "gap" in inward-FDI could insofar be the result of labour market regulations in Germany.

- Second, one can analyse the labour market conduct of those firms that have invested in Germany (despite of, because of or independent from the regulations prevailing).

In the following, we deal with the second aspect only.[10]

6.1 Investors from Anglo-Saxon countries

Special features of the employment strategies of FoFs can be analysed best on the basis of firm-specific information since aggregate statistical data cover firm-specific heterogeneity. In a recent study, *Schmidt/Sadowski* (2001) analyse the employment strategies of 297 firms located in Germany (119 US affiliates, 46 UK affiliates, and 132 German-owned firms as a comparison group). They investigate seven areas of relevance for the employment situation:

10 For the relationship of labour market regulations and FDI see *Peters* (2001) and *Borrmann/ Jungnickel/Keller* 2001). Studies available predominantly show a negative relationship of both. There remain, however, a number of open questions, particularly with regard to methodology.

- Existence of works councils,
- Adoption of collective agreements on tariffs,
- Membership in employers' association,
- Profit sharing arrangements for non-exempt employees,
- Importance of variable payment,
- Equity capital participation of non-exempt employees,
- Involvement in vocational training.

The three first-mentioned aspects of employment policy relate to Industrial Relations (IR) policy while the others are elements of Human Resources Management (HRM). The existence of works councils is considered an indicator of the implementation of co-determination rules. The authors develop and test the hypothesis that FoFs do not differ substantially from German firms in their IR policy whereas they take over HRM practices they are familiar with from their home countries. This differentiation is justified by strict regulations in IR leaving little room for firm-specific policies, whereas HRM is less regulated and has a strong firm-specific component. Anglo-Saxon firms seem to be a good subject to study as the Anglo-Saxon system of corporate governance differs substantially from the German system (*Hofstede* 1983).

Table 7: Employment conduct of Anglo-Saxon firms in Germany compared with German-owned firms[a] (%)

IR/HRM[b]-variable	US/UK subsidiaries	Local German firms	Significance of difference[c]
Existence of a works council	86	70	**
Covered by collective agreements	66	65	not significant
Profit-sharing arrangements, non-exempt employees	31	15	**
Share of employees receiving variable pay	56	35	**
Ownership arrangements, non-exempt employees	21	6,3	**
Share of trainees in workforce	2,6	5,3	**

a Percentages show the share of the firms concerned and the share of employees in the firms concerned respectively. The number of observations is different in the various areas of employment strategy (FoFs: n=144 to 165; German-owned firms: n= 116 to 132; **b** HRM= Human Resources Management, IR = Industrial Relations; **c**= Level of significance: **< 0,01.
Source: *Schmidt/Sadowski* (2001), p. 9

The results of *Schmidt/Sadowski's* calculations are summed up in table 7. They largely support the basic hypothesis.

- Anglo-Saxon affiliates have established works councils even on a larger scale than the German comparison group;
- they adopt the results of collective bargaining on tariffs as German firms do;
- membership in employers' associations is similar in both groups of firms;
- FoFs are more prone to profit-sharing arrangements;
- employees in FoFs receive a higher share of variable pay;
- FoFs offer more options for equity capital participation;
- they are, however, less involved in vocational training of young people.

The results of comparing percentage shares remain valid when control variables are introduced. However, the explanation value is often rather low with Pseudo R^2 between 0.08 (variable pay) and 0.17 (equity capital participation) only. Obviously, firm-specific aspects play the major role for employment-related strategies.
The *Schmidt/Sadowski* (2001) study does not indicate directly that German labour market regulations play a significant role for firms when deciding whether to invest in Germany or elsewhere. It does, however, show that Anglo-Saxon firms having invested in Germany adjust to German practices despite regulation. As regards the formation of works councils, they are even "more German" than indigenous firms. On the other hand, they seem to transfer their HRM practices from the home countries: They are more flexible in the mode of payment, more open to capital participation of employees and less ready to invest in vocational training.

However, we have to ask to what extent these results are representative for all German FoFs roughly half of which are owned by continental-European firms. In the following, we approach the same issues on the basis of the IAB Establishment Panel representing (most probably) both Anglo-Saxon and continental European based firms in a balanced proportion. Furthermore, the data available open up the possibility to distinguish between "multinationals" and " nationally oriented" firms within the group of German firms.

6.2 Employment strategies of establishments in the IAB panel

Information on IR strategies is available from about 1 200 manufacturing establishments in West Germany over 200 of which are foreign-owned. Over one third of the almost 1 000 German firms can be considered "multinational" according to our export-based definition. The difference to *Schmidt/Sadowski's* (2001) empirical basis does not only lie in the inclusion of continental-European-owned FoFs, but also in the fact that the German comparison group is more than seven times as large. Furthermore, the IAB data probably comprises more small and medium-sized firms (SME).

We first discuss our hypothesis that FoFs investing in Germany show an especially flexible employment conduct in the following fields: Binding of collective wage negotiations, existence of particular firm-specific benefits, and the involvement in vocational training. Secondly, we analyse the dynamics of the employment with FoFs as opposed to German firms. The flexibility thesis is only partly supported by the evidence produced. In HRM, substantial differences evolve compared with the *Schmidt/Sadowski* (2001) study.

- FoFs are rather more than less bound to collective wage agreements prevailing in Germany. Only in the lowest and in the upper size groups the degree of binding is lower. German multinationals even adopt collective agreements more often than nationally-oriented German firms. An explanation for this result coinciding with *Schmidt/Sadowski* (2001) could be that above-average productive firms benefit from taking over collective wage agreements more oriented on average productivity increases.

- In view of high productivity and adoption of collective wage agreements, it could be expected that FoFs offer more special benefits to their employees. However, this assumption is largely rebutted by data. FoFs are the forerunners neither in the prevalence of payment above the agreed wages nor in systems of profit sharing or equity capital participation (tables 8 and 9). Surprisingly, FoFs are only in the lead in terms of company pensions (as opposed to the general old age pension system) - a field one would have least expected. It is important to know that the difference to the *Schmidt/Sadowski* (2001) study only results to a small extent from more heterogeneity of the FoFs included (more non Anglo-Saxon firms and more SME). The most obvious differences are between the groups of German-owned firms in the

two samples. For example, according to the IAB data for German-owned firms, the spread of profit sharing systems is much wider (27 %) than according to *Schmidt/Sadowski* (15 %). This could be an effect of a more representative basis of our calculations. Nevertheless, the lead of FoFs and German multinationals over German national firms corresponds to our expectations.

- FoFs are less involved in vocational training than German firms. This is only to a smaller extent the result of fewer firms engaged in these activities. Rather, the individual firms employ fewer trainees than German firms of a comparable size. Obviously, FoFs rely on training that is more specific to their needs (on-the-job training) rather than on more general vocational training. Between the two groups of German firms (multinationals and nationally oriented) there are no significant differences in vocational training.

- On the other hand, FoFs put much more weight than "purely" German firms on continuous professional development (table 10). They apparently promote the development of professional skills according to their specific needs rather than in the framework of the general dual training system in Germany. Foreign ownership is a significant factor in explaining the share of employees attending professional development schemes (table A-1). This is more in line with our expectation of flexible conduct on the labour market. However, this result should not be over-interpreted since the explanation value of the regression is rather low (R^2=10%). Interestingly, professional development shows a structural bias. It is much more prevalent in services than in manufacturing and it concerns the skilled workforce much more than the unskilled (table 10).

Table 8: Foreign-owned and German-owned establishments in comparison – prevalence of systems of profit sharing (%)

No. of employees	Establishments with profit-sharing arrangements					
	Share in all firms with info on specific benefits			Share of employees concerned		
	FoFs	German-owned		FoFs	German-owned	
		nationally oriented	interna-tionally oriented		nationally oriented	interna-tionally oriented
50-99	18	18	16	37	29	45
100-199	21	19	25	57	57	57
200-499	24	19	32	51	53	45
500-999	35	19	37	70	28	58
>=1000	35	42	50	77	73	64
total	**27**	**20**	**33**	**62**	**48**	**55**

a unweighted means
Source: Computed on the basis of data of the IAB Establishment Panel

Table 9: Foreign-owned and German-owned establishments in comparison – prevalence of systems of equity capital participation (%)

No. of employees	Establishments with capital participation arrangements					
	Share in all firms with info on specific benefits			Share of employees concerned		
	FoFs	German-owned		FoFs	German-owned	
		nationally oriented	interna-tionally oriented		nationally oriented	interna-tionally oriented
50-99	4,5	5,6	6,1	nv	23	64
100-199	9,5	4,7	6,6	35	24	70
200-499	11,2	7,0	9,1	65	70	52
500-999	11,6	5,5	11,1	90	65	47
>=1000	22,5	32,7	16,7	61	60	76
total	**12,3**	**7,9**	**10,2**	**65**	**50**	**62**

a unweighted means
Source: Computed on the basis of data of the IAB establishment panel

Table 10: Share of employees in professional development schemes (%)

	unskilled labour	skilled labour
foreign owned	4.1	24.4
"purely" German owned	2.9	17.2
German multinationals	4.7	17.6
total	3.4	18.3

Source: IAB establishment panel; own computation

6.3 Employment dynamics

High fluctuation could be both an important element and a result of flexibility of internationally oriented firms. If FoFs followed particularly flexible employment strategies, one would, therefore, expect above-average fluctuation, i.e. entering and leaving of employees in the same period of time.[11] Respective data is available for the first halves of the years 2000 and 2001 (table 11).

Table 11: Foreign-owned and German firms in comparison - changes in workforce in I/2000 and I/2001 (in % of workforce at mid 2001)

Category establishments	net change	gross change		
		gains	losses	fluctuation[a]
FoFs	0.9	6.5	5.6	7.4
German -owned ...export quota<30 %	0.7	7.1	6.4	9.6
...export quota>30 %	0.9	4.1	3.2	4.2

a fluctuation is defined as 2[minimum(enterings, leavings)/no. of employed] in I/2000 and I/2000
Source: Computed on the basis of data of the IAB establishment panel

During this period of time, German as well as foreign-owned firms slightly increased their work force (by less than 1 %). This small net increase resulted from substantial entering and leaving which add up to over 12 % in the case of FoFs during the time period considered. This indicator of employment dynamics is, however, even little lower than with German national firms. Unexpectedly, German multinationals report significantly lower changes. Regressions on employment growth display similar results

11 In formal terms, fluctuation is defined as [minimum(enterings, leavings)/no. of employees] within a certain period of time.

as the bivariate comparison between groups of establishments. The foreign ownership dummy is by no means significant (regressions not reported here).

Substantial gross changes of employment are only to a small extent results of differing firm-specific developments. Some establishments expand their work force while others have suffered from shrinking business or rationalised their operations and reduce their work force. Almost two thirds of gross changes result from fluctuation, i.e. from firm-specific entering and leaving of employees within the period in question. In this respect, there is no lead of FoFs. On the contrary, nationally oriented firms show the highest fluctuation rate. Insofar, it is not surprising that the FO dummy is not significant in the explanation of the fluctuation rate (table A-2).

High fluctuation as an indicator of substantial employment dynamics does not necessarily reflect a hire & fire mentality on the side of the firms. It can also result from the desire on the side of the employees to end the work contract. Respective data does, indeed, show that most of the cutback of jobs occurred following termination by the employees (*Borrmann/Jungnickel/Keller* 2001). This holds for foreign as well as for German firms although the share of terminations by the employer is significantly higher in the case of manufacturing FoFs.

On the whole, the data presented does not give strong support to the supposition of a particularly flexible employment strategy of FoFs compared to German-owned firms.

7 CONCLUSIONS

Germany has attracted less FDI than would have been “normal” in view of size, income level, and geographic position in the centre of Europe. At the same time, unemployment has reached an all time high level. Our analysis has shown that more inward FDI would probably not lead to a major improvement of the employment level. In particular, it would hardly help to put more of the less qualified people to work. It could, nonetheless, play an important role in promoting structural change and help create jobs that offer high income opportunities. This holds particularly for FoFs in the lower size classes (50-200 employees) where the biggest productivity advantages exist. In these size classes the share of newly-founded greenfield ventures probably is higher than

among the largest FoFs where acquisitions of long-established companies tend do dominate. From this, it follows that falling behind of Germany in new inward FDI has led to income losses in Germany. The attraction of new inward FDI could be indicated for economic policy.

However, a positive assessment of FoFs would not be a sufficient condition for specific promotion. A number of problems are opposed to any such promotion policy: Selection of investments to be promoted, exclusion of free riders and quantification of the returns of such policy are among the most important problems. While the costs of promotion would be definite, the returns would be highly uncertain. It seems more meaningful to promote investment in general by reduction of impediments for foreign and domestic investors alike. Central elements of such policy would be the reduction of administrative regulation and improved quality of domestic resources to make them more attractive to internationally mobile investors (*Borrmann/Jungnickel/Keller* 2001).

Although hardly any systematic differences in the labour market conduct of FoFs and German firms are obvious, one should not draw the false conclusion that German labour market system and regulation, as it is, is a neutral or even a positive attribute of Germany as a business location. Our analysis could only cover those firms that had actually invested in Germany and overcome any political impediments. We could not include those firms that had made their decision against German locations and invested elsewhere instead for various reasons, including labour market regulation. Transaction costs resulting from administrative and legal regulation can represent substantial impediments for new investors not familiar with practices prevailing in Germany.

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Tables

Table A-1: Determinants of professional development - regression results[a]

constant	-2.86**(-11.99)
Ln(employees)	-0.16**(-18.68)
foreign owned	0.23**(4.35)
German multinationals.	0.15**(2.73)
Ln(compensation of employees.)	0.19**(6.52)
trade/repair dummy	0.27**(6.04)
transport/communications dummy	0.19*(2.57)
banking/insurance dummy	0.98**(14.24)
company related services dummy	0.35**(7.36)
other services dummy	0.42**(10.40)
public service dummy	0.48**(9.54)
R^2 adjusted	0.10
number of cases	5576

a Dependent variable: share of employees attending professional development scheme, regression coefficients, t-values in brackets
level of significance: ** at1%, * at 5%
Source: IAB establishment panel; own computation

Table A-2: Determinants of employment fluctuation[a]

	I
intersection with y axis	2.52***(7.82)
(FO)Foreign ownership dummy	0.51 (0.97)
germmult (dummy of German multinationals)	-0.10 (-0.70)
number of employees	-2.25 (-0.62)
wage per employee	0.00 (0.32)
FO* number of employees	-0.00 (-0.50)
FO* wage per employee	-0.00 (-0.63)
share of part-time employees	0.03***(3.25)
share of secondary employment	0.02**(2.09)
share of unskilled labour	0.007***(2.94)
17 sectoral dummies	yes
R^2 adjusted	0.03
Number of cases	2441

a fluctuation is defined as [minimum(enterings, leavings)/no. of employed] in I/2001 and I/2000
Source: IAB establishment panel; own computation