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**The Evolution of Foreign Subsidiaries and
Employment: the Case of German Direct
Foreign Investment into North West England**

WP00/06

December 2000
ISSN 1471-857X

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Biography

Arne Heise is Professor of Economics in the Department of Economics at the University of Economics in Vienna. Before he took up his appointment in Vienna he worked for the Hans Boeckler Foundation in Dusseldorf where he researched into employment and labour market issues. His research work has been connected to development in the German economy, including changes in labour markets.

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Abstract

This paper investigates the evolution of foreign subsidiaries in promoting employment in their host regions. The implications for employment are considered using a theoretical frameworks on how Multinational Corporations (MNCs) develop their network of subsidiaries. The theoretical framework suggests that (when parent companies are based in economies with similar levels of development as the host economy) the development of subsidiaries should follow a time path beginning with export enhancing investments that diversify into more complex operations. An analysis is then made on how this would affect employment. The theoretical framework is assessed using evidence from a survey of German subsidiaries in North West England. The survey suggest that German MNCs may not be providing the expected benefits that are sought from the large increase in Direct Foreign Investment (DFI) flows that have followed from the integration programmes of the European Union (EU). The results of the survey are reinforced by evidence from other research work, which suggests that European MNCs are less likely than non-European to create diversified networks of subsidiaries within the EU. Some policy implications and a future research agenda are drawn from the results.

Key words: Direct Foreign Investment, Multinational Corporations, Employment and European Union.

Introduction

The UK is the largest recipient of extra-EU DFI flows and is also a major host for intra-EU flows. Successive UK governments have encouraged these flows as a means to help to close the development gap between the regions of the UK and to create jobs in areas with high levels of unemployment. Attracting DFI flows and seeking to retain and expand the subsidiaries that are created, or taken over, by MNCs has become a major plank in the regional policy of European countries (Collis and Noon, 1994, Young, Hood and Wilson, 1994, Brown and Raines, 2000). The importance of DFI inflows to stimulate local industrial development has also become a focus of research (Markusen and Venables, 1999). However, there is very limited knowledge available on the development of foreign owned subsidiaries and therefore on the long-term employment effects of DFI inflows (Hill and Munday, 1992).

This paper provides an analysis of the theoretical case that DFI inflows between countries with similar levels of development should increase productivity and thereby boost employment in the regions of the EU. The analysis suggests that the most significant employment effect of DFI inflows is likely to be to alter the pattern of jobs and thereby to expand employment in more specialised and highly skilled jobs. However, in the short-run, DFI inflows may well lead to a small number of directly created jobs with some employment losses, in the early stage of subsidiary development, in the host country due to the export enhancing nature of DFI. Evidence on the development of German subsidiaries in North West England and the likely implications for employment is presented. This evidence suggests that many German subsidiaries are not moving on from the export enhancing type of DFI and that there is little evidence that high value added activities, such as R&D, are being developed in North West England. This evidence is supported by other studies that have shown that the subsidiaries of European MNCs, that are located in the member states, tend to be engaged in low-level types of activities. One of the implications of the low level of operations of many subsidiaries of European MNCs are that much of intra-EU DFI will not have led to significant creation of additional jobs in host countries. Moreover, many of the jobs created by such DFI is likely to be in low valued added activities such as sales and distribution. Some tentative policy

recommendations are made on how to encourage DFI flows that would make significant contributions towards closing the development gap in the regions of the EU.

Theories of DFI and Implications for Employment

The eclectic paradigm, often referred to as the OLI [ownership, location and internalisation] paradigm, identifies transaction costs, location and ownership specific advantages as being the main motivation for DFI flows (Dunning, 1981 & 1992). However, the OLI paradigm does not explain the evolution of DFI flows, although attempts have been made to develop evolutionary theories of MNCs (Kogut and Zander, 1993). The Uppsala Internationalisation Model suggests that DFI flows are initially export enhancing (marketing, distribution and low level manufacturing operations), but that such activities lead, by a process of learning, to the establishment of higher level production sites and R&D facilities as MNCs gain experience of conducting business in other countries (Johanson and Wiedersheim-Paul, 1975, Johanson and Vahlne, 1977). A similar developmental process is postulated in Innovation-Related Internationalisation Models (Bilkey and Tesar, 1977, Czinkota, 1982). Stage models of internationalisation stress the importance of learning, often originating from exposure to similar but slightly different cultural environments, that induces the development of DFI strategies. However, these models are not directly related to the OLI paradigm, or indeed any well-developed theory of DFI. Moreover, they are rather mechanistic and suggest that MNCs follow a rigid linear development of internationalisation that is not often verified by empirical work (Andersen, 1993). Doubt has been cast on the predictive power of stage theories of internationalisation even by some of the proponents of these theories (Johanson and Mattson, 1988).

A series of theories based on the development of networks (Turnbull and Valla, 1986, Nordstrom, 1990) and contingency theories (Reid, 1983, Yeoh and Jeong, 1995) have sought to clarify the complex factors that appear to determine the internationalisation path of MNCs. These theories adopt a less mechanical view of the process of internationalisation. Notwithstanding the debate on how to best

capture the many factors that influence the development of the internationalisation processes of MNCs, most of the theories and empirical evidence provides support for the view that DFI flows follow an evolutionary processes that develops over time. The time path and major characteristics of this evolutionary process seems to be influenced by a variety of factors, but in general firms appear to follow a progression from simple to more complex activities (Young, 1987).

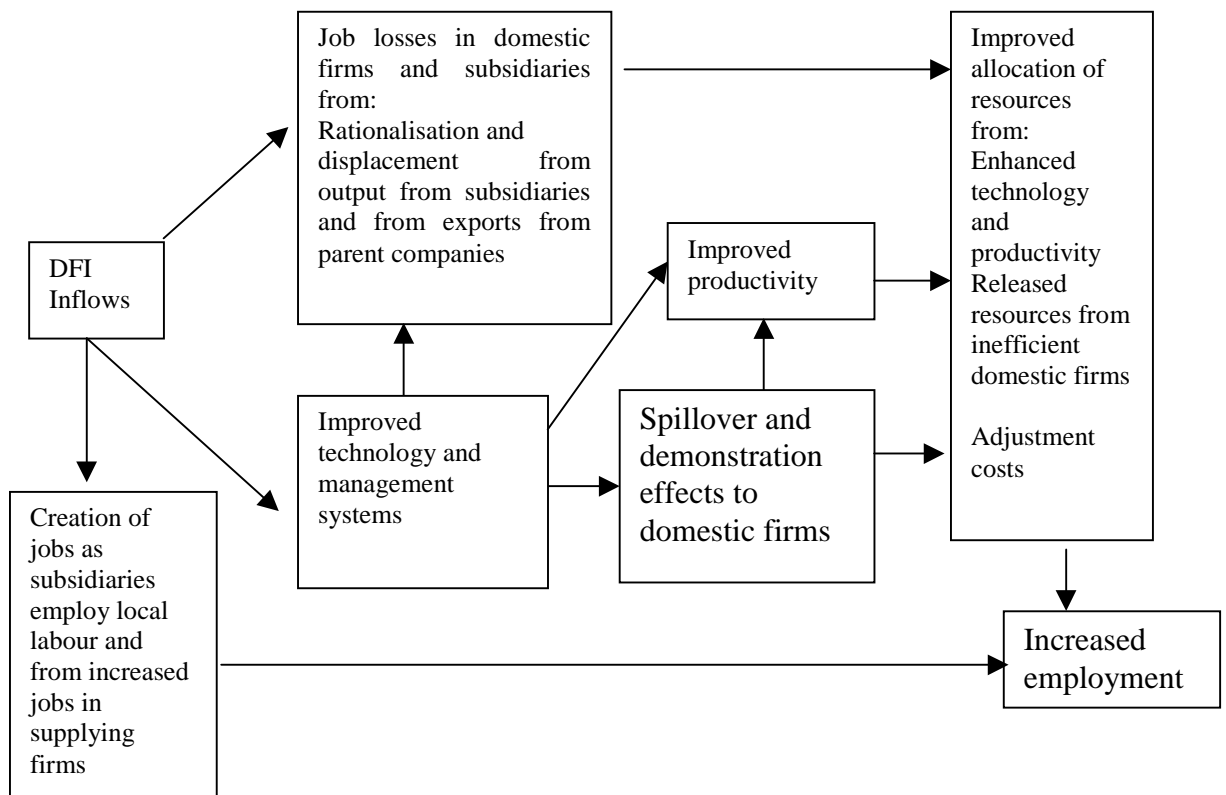
Employment is normally created by DFI inflows because foreign owned subsidiaries engage in operations that require the use of local labour supplies and by expanding demand for labour from their supplying firms. However, when DFI is accomplished by merger and acquisition there is likely to be job losses because of rationalisation of the operations of the enlarged firm (Williams, 1999). Jobs may also be lost in the host country because DFI inflows that are export enhancing for the parent company can result in a decline in employment by domestic firms that lose market share to imports (OECD, 1994). However, DFI increases capital accumulation that often embodies better technology and improved management systems. There are also potential spillover benefits to domestic firms and industries from DFI activities arising from demonstration effects and the transfer of knowledge to suppliers and other firms that are connected to foreign subsidiaries.

The direct effects of DFI (increased capital accumulation and improved technology and management systems) into the UK appear to lead to foreign owned firms achieving similar levels of productivity as those in France and Germany (Barrell and Pain, 1997, Outon, 1998). Evidence has been found that DFI leads to spillover benefits that improve the general level of productivity in host countries (Mansfield and Romeo, 1980, Blomstrom and Kokko, 1998 and Engelbrecht, 1997). In the UK the evidence is mixed on the extent and significance of spillovers. Driffield found that they were small and restricted to the areas near centres of DFI and that they did not benefit the industries that had experienced large DFI inflows (Driffield, 1999). This would imply that DFI leads to job losses in the industries that experience high DFI inflows and that adjustment to this requires the channelling of released resources into other or new industries. However, other studies have found that the spillover effects are large and benefit both industries that experience large DFI flows and other industries (Hubert and Pain, 1999). The additional employment in host regions

arising from DFI spillovers appear to be small and normally takes a long time to materialise (Gillespie, et al, 2000)

Trade theory indicates that inflows of DFI should improve the allocation of resources and thereby enhances the potential of host countries to increase employment. However, to acquire these benefits economies incur adjustment costs connected to the movement of resources to new activities and the development of emergent industries (Sachs and Warner, 1993). These trade theories suggest that the employment effects of DFI inflows are delivered by two main routes: directly, by employment by subsidiaries and indirectly by improving the allocation of resources (see Figure 1). Clearly, improvements in the allocation of resources from DFI inflows can play an important role in influencing the employment effects of foreign investments. The type of operations that foreign owned subsidiaries engage in and the spillover effects to domestic firms play an important role in determining the employment effects of DFI inflows (OECD, 1994).

Figure 1 DFI Inflows and Employment



The OLI paradigm has been supplemented by theories that focus on the role of technology, geographical factors and resource-based views of strategic behaviour. These theories suggest that the employment effects of DFI flows are connected to a variety of complex factors that determine the development of subsidiaries and thereby influence the evolution of their employment patterns.

Technological Based Theories

Technology based theories are founded on the premise that firms seek to transfer technology to those locations that offer the prospect of improved benefits from exploiting the technical expertise of MNCs (Narula, 1996). However, to successfully transfer technology, host countries must have the capability to effectively use such technology. The technological capabilities of countries are determined by the experiences of firms (Nelson and Winter, 1982) the institutional structure of countries (North, 1990) and the ability of the infrastructure to support technological developments (Freeman and Soete, 1997). Firms that have experience of operating in different parts of the world tend to develop policies that involve technological transfer between the various parts of the firm. The depth and level of such technological transfer increase the more amenable are institutional frameworks and the infrastructure of the host country for the effective utilisation of technological systems. The requirement that host countries must be able to effectively assimilate new technology means that the bulk of DFI flows that embody significant technology transfer is between countries with similar, but slightly different, technological capabilities

These theories suggest that DFI that involves substantial technology transfer will boost the productivity of firms in both home and host. Therefore, DFI flows should, in aggregate, contribute to a more effective use of resources leading to growth and employment benefits. Technology based theories, like the traditional theories, suggest that there will be adjustment costs to the new allocation of resources that accompanies DFI flows.

Geographical Based Theories

The new international economics argues that trade between countries with similar economic structures is largely based on the ability to reap increasing returns to scale

in the design, production and distribution of goods and services (Helpman and Krugman, 1985). The new international economics predicts that DFI flows are partly a consequence of the attempts to secure the advantages from locating in different regions. Models using this approach are focused on the benefits of geographical concentration (clustering) to reap internal and external economies of scale and to achieve low cost access to large markets (Krugman and Venables, 1990, Krugman, 1991, Venables, 1996). These models suggest that as trade costs are reduced, firms will cluster near their large markets.

The insights into the importance of geographical factors that arose from the new international economics led to an increased focus on what has become known as the new economic geography (Ottaviano and Puga, 1998). Models based on the new economic geography focus on the importance of the elasticity of supply of inputs, the mobility of inputs and congestion costs as limiting factors in the incentives to cluster (Helpman, 1997, Ottaviano, 1996 and Ricci, 1996). In these models the process of clustering initially leads to cost advantages from internal and external economies of scale and from the expansion of the size of the market as concentration raises the income of factors of production within the cluster. The advantage of clustering induces inputs to migrate to clusters thereby creating a virtuous cycle of success breeding further success. However, as clusters develop, incentives to disperse operations increase because factor prices rise for those inputs that are immobile or that have inelastic supply. Congestion costs also increase as clusters develop and grow.

In these circumstances DFI decisions are influenced by the desire to find locations that confer the best possible supply of those factors of production that are immobile and that provide more elastic supply of the factors that are experiencing large price increases in existing clusters. A trade-off emerges between economies of scale and scope and the advantages of proximity to large markets that clusters obtain compared to rising production costs associated with input supply and congestion. Therefore, a differentiation of operations emerges with core activities that benefit from geographical proximity being located in clusters while operations that have low proximity benefits are consigned to peripheral locations. In some cases the immobility of key resources can induce relocation of core activities to an area that

has adequate supply of such resources, even when these areas are congested. The extensive migration of investment banking firms to the City of London and of IT firms to Silicon Valley illustrates the importance of key, but immobile resources, in location decisions.

The limited empirical evidence available on the new economic geography tends to support the view that reduction in trade costs stimulates agglomeration. A study found that 14 out of 18 industries in the EU had increased geographical concentration and that those industries with strong economies of scale had the highest levels of concentration (Brulhart, 1996). Concentrations in these industries tend to be strongest close to their largest markets (Amiti, 1998). However, the clustering of industries in the EU is not as strong as in the USA (Brulhart, 1998). Evidence also exists that supports the dispersal effect in that there has been increased geographical concentration near the core of the EU, but that there has been dispersal since 1980 (Brulhart and Torstensson, 1996).

New economic geography theories imply that DFI flows lead to improvements in the allocation of resources by similar processes to those outlined in the OLI paradigm. Therefore, the impact on employment is likely to be comparable to those predicted by the OLI paradigm. The main difference is that the improvements in resource allocation induced by DFI flows will have a pronounced geographical impact on employment. Therefore, the potential to increase employment and change employment patterns and the adjustment costs associated with the transfer of released inputs are likely to have strong regional characteristics.

Resource Based Theories

Resource based theories regard the development of differentiated networks of subsidiaries as a major method of developing competitive advantages (Bartlett and Ghoshal, 1989, Ghoshal and Nohria, 1989, Doz and Prahalad, 1993). Organisations that construct differentiated networks transform some of their subsidiaries into centres of competence. These centres are subsidiaries that develop core activities that play an important role in the operations in all, or significant parts, of the MNC. Therefore, subsidiaries located in areas that can be developed into centres of

competence become central to the overall objectives of MNCs (Hedlund, 1994, Birkinshaw, Hood and Jonsson, 1998).

Subsidiaries selected to be centres of competence have desirable resources, based on local networks that are founded on trust and access to inputs, that are useful in achieving the goals of MNCs. Desirable resources include: pools of skilled labour, access to high quality products, membership of local networks that include organisations and agencies that help to achieve the strategic objectives of the parent company. If these desirable resources cannot readily be transferred to other parts of the firm it is beneficial to develop subsidiaries into centres of competence and to use output from these centres to satisfy demands over all, or large parts, of the operations of the firm. On the other hand if desirable resources can be easily transfer to other parts of firms they can be moved to those locations that grant the greatest benefits to firms. The goal of the resource-based strategy of MNCs is to blend their network of subsidiaries into a more effective unit. Therefore, MNCs take advantage of the different cultures and business environments in which their subsidiaries operate to develop intra-firm networks that make the best use of the resources available to them (Birkinshaw, 2000).

A trend to develop centres of competence as MNCs gain experience of international operations appears to be strong in many MNCs (Birkinshaw and Hood, 1998). However, a study comparing Japanese and German MNCs found that one in three Japanese subsidiaries were classified as centres of competence while the figure for German subsidiaries was one in eight (Schmid, 1999). This indicates that German firms are inclined to retain core competencies in their home base

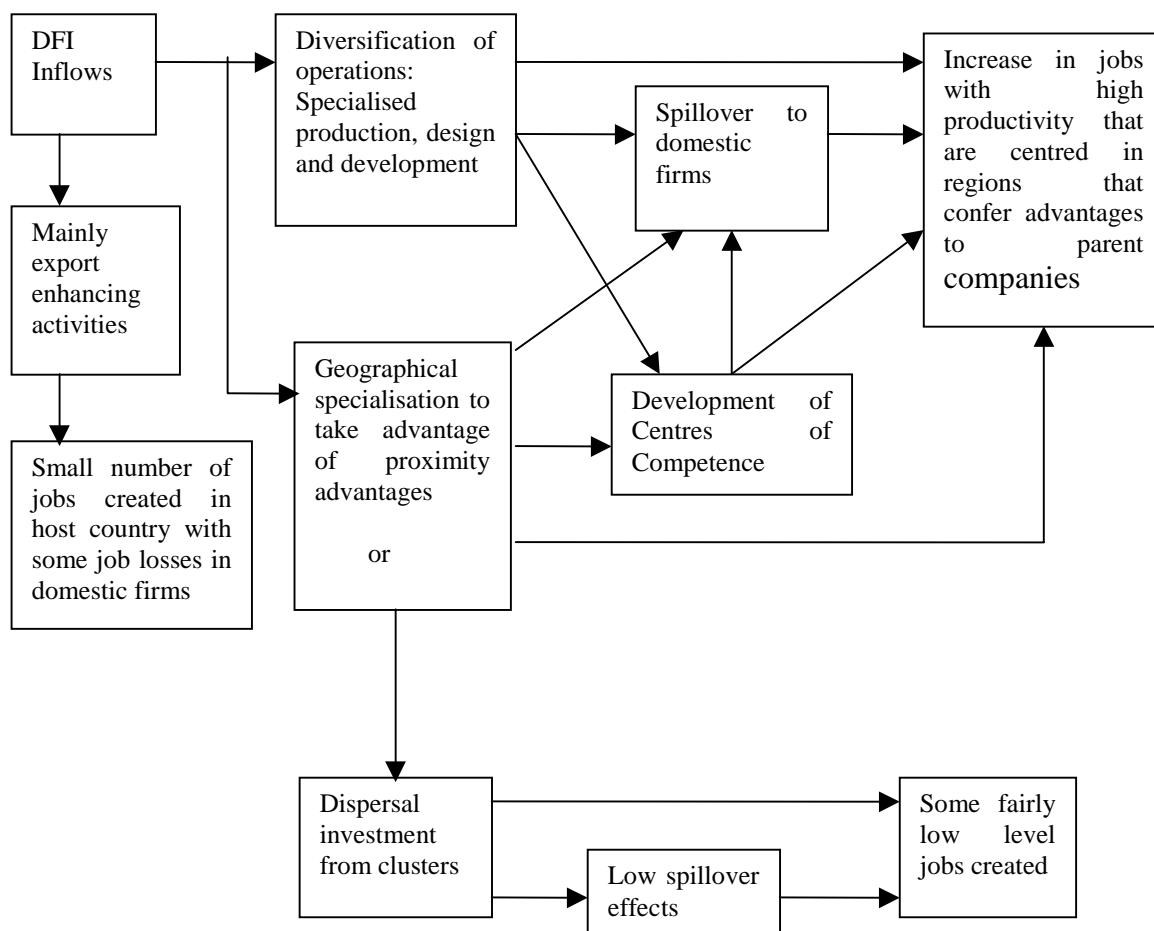
The development of centres of competence is likely to have complex implications for the development of employment. In those subsidiaries that develop into centres of competence demand for labour and other inputs that confer advantages to the parent company will rise. This is most likely to involve an increase in demand for more highly skilled and specialised types of inputs. However, the demand for inputs used in more mundane activities will probably decline as these operations are transferred elsewhere within the MNC. The local networks of firms, organisations and other agencies that are connected to subsidiaries are likely to benefit from spillovers from the development of centres of competence. Some subsidiaries that are not developed

into centres of competence may focus their operations on mundane operations such as sales, distribution and low valued manufacturing. Others may become sites for the dispersal of peripheral activities from successful clusters. These types of developments may have harmful spillover effects on local networks because subsidiaries become focused on low technology operations.

DFI and Employment Effects

The main theories and empirical evidence indicate that DFI improves the allocation of resources in both home and host countries and that this is likely to lead to enhanced employment opportunities. However, adjustment costs are incurred as a result of DFI activities. Consequently, it is plausible to argue that the ability to take full advantage of the employment enhancing potential of DFI is linked to the capacity of home and host countries to effectively transfer resources to new and more productive activities. Stage and evolutionary theories of internationalisation and the development of centres of competence suggest that as firms gain experience of DFI activities they will evolve from export enhancing DFI to more diversified activities, such as specialised production and R&D operations. This implies that the pattern of jobs associated with DFI activities will become more diverse as MNCs develop their location strategies. Technology based theories indicate that the technological capabilities of home and host countries have a strong influence on the type of DFI activities that are undertaken. Therefore, the patterns of employment associated with DFI are strongly influenced by the technological capabilities of home and host countries. The new economic geography paradigm emphasises the importance of spatial factors and the benefits of geographical proximity for DFI activities. This highlights the importance of geographical factors as a major force in the evolution of the employment effects associated with DFI. The new theories, based on technology, geography and the development of MNCs as differentiated networks, indicate that the most significant employment benefits of DFI inflows are linked to changing the pattern of jobs by boosting productivity in areas that have geographical, technological and local network advantages. However, DFI to regions that do not have these advantages, or when parent companies do not pursue policies to develop their subsidiaries into differentiated networks are unlikely to reap these type of benefits (see Figure 2).

Figure 2 Diversifying DFI Inflows and Employment



European and Non-European DFI Flows

Studies of European MNCs reveal that they are less likely than non-European to develop integrated networks among their European subsidiaries and that they tend to retain core competencies in their home base (Chesnais, Ietto-Gilles and Simonette, 2000). A study of German DFI in the UK found that German owned subsidiaries tended to focus on exporting enhancing activities and that there was little evidence that their subsidiaries were evolving into more diversified operations (Hood and Taggart, 1997). Results from a survey of 452 foreign owned subsidiaries in the UK revealed that 60 per cent of European subsidiaries that were established by merger

and acquisition either decreased or had no change in their employment after they changed ownership. The study also found that European MNCs were less likely to have significant purchases from the UK than North American or Asian/Pacific firms and that many European MNCs made no or only very small purchases in the UK (Williams, 1999). Studies on the effects of German DFI have found evidence that, on balance, such investments have been job creating, or defending, in Germany and by implication, job destroying, or at best, mildly job creating in host countries (Bailey, 1979, Tüselmann, 1998).

These and other studies indicate that the European subsidiaries of European MNCs often resemble outposts of their parent company. In contrast non-European MNCs, especially US firms, make more purchases in the host country and develop their European subsidiaries into integrated networks covering a wide variety of activities. These subsidiaries are given considerable autonomy to develop products and to specialise in particular operations in which they have advantages. These types of networks lead to high levels of intra-firm EU trade that stimulates pan-European systems of operations (Chesnais and Soilleau, 2000). This implies that the European subsidiaries of non-European MNCs are likely to be involved in more technologically advanced and higher value-added activities than their European counterparts.

The Evolution of DFI and Employment

The analysis of theories connected to the evolution of DFI flows indicates that four key trends influence the development of employment in host regions.

1. The more subsidiaries supply foreign as well as their domestic markets the more likely it is that DFI flows will lead to job increases in host regions.
2. As parent companies gain experience of operating in host regions, they will diversify their operations to reap benefits from geographical and network advantages. This is likely to lead to changes in the composition of jobs.

3. Technology transfer is likely to increase and deepen to subsidiaries located in areas with good capabilities to assimilate such technology as parent companies learn about the advantages in host regions. This will enhance the growth of highly skilled jobs in host regions.
4. European MNCs may not display in European host regions strong tendencies to develop the trends outlined in 1. to 3.

The results of a survey of German subsidiaries in North West England was used to provide evidence on these existence of these four trends.

A Study of German DFI into NW England

A questionnaire was sent to 190 German owned companies in NW England and 62 usable replies were received. The companies were located mainly in the manufacturing sector and most (46 per cent) employed between 10 to 99 employees. The majority of the companies had been acquired by merger/acquisition with a smaller number being greenfield sites. The majority of the companies have been German owned for less than 20 years and only 24 per cent have been German owned for more than 21 years. The majority of the respondents (55 per cent) cited sales and distribution as their main activity (Appendix 1).

The direct employment effects

The total direct employment of the 62 respondents was 8373 in 1998, an increase of 6 per cent over a ten year period. In 1998, 46.7 per cent of the respondents employed between 10 - 99 employees and only 6.5 per cent employed more than 500. The number of firms employing over 500 remained unchanged in the period 1988 to 1998. Over the same period, the number of firms employing less than 10 employees declined and there was a slight increase in the number of firms employing between 100 - 499. The largest increase was in the 10-99 size class. The time path of the development of direct employment by German subsidiaries in NW England appears to be on an upward trend, except for those employing less than 10 and more than 500 employees.

The employment record of the sample suggests a small number of direct jobs have been created. However, the large number of firms that indicated that sales and distribution were their main activity and the large number who only supply the UK market suggest that the indirect impact on jobs in the UK could be negative because of displacement of UK jobs from increased German exports. Moreover, the significant share of DFI that has been connected to mergers and acquisitions suggests that the creation of direct jobs has been small (Appendix 1).

Markets supplied by German subsidiaries

Some 72.6 per cent of German firms in NW England supplied only the UK market and just over half of them have been German owned for more than 11 years. Firms in the 1-10 years and 21-30 years range are more active in supplying both UK and foreign markets as compared to the oldest firms (over 30 years) and those between 11-20 years. Both small (1- 9 and 10-99 employees) and large (over 500 employees) are predominately involved in supplying only the UK market. However, more middle-sized companies (100-499 employees) supply both the UK and foreign markets. Of the 64.6 per cent of firms that increased their employment, some 77.5 per cent supplied only the UK market. Of the 17.3 per cent who decreased their employment some 64 per cent supplied only the UK market (Table 1). The bulk of the direct jobs that have been created by German subsidiaries appear to be connected to the supply of the UK market.

(Table 1 about here)

The results indicate that German DFI has been strongly linked to supplying the UK market and this is likely to involve significant export enhancing activities by parent companies. Over 80 per cent of the firms that supply only the UK market employ less than 100 workers. This class is nearly 70 per cent of the German subsidiaries in NW England. The large number of German subsidiaries that appear to have been engaged in export enhancing activities for over 11 years suggests that DFI activities have boosted, or defended, employment in Germany for a long period. The high

proportion of firms that are mature (over 30 years) and in the 11 to 20 years bracket that supply only the UK market suggests that these groups of German subsidiaries are stuck in the export enhancing stage of the internationalisation process. German subsidiaries with small and large work forces also display a similar tendency.

Diversity of operations by German subsidiaries

Half of the sample indicated that their operations had become more diverse, of which 51.4 per cent were in the increased employment class. There was very little difference in the proportions of increase, decrease and no change in employment class relative to increase or decrease in diversity of operations. This implies that increasing diversity has no clear impact on the number of direct jobs. However, increasing the diversity of operations is likely to alter the patterns of jobs as firms widened and increase the scope of their activities thereby requiring new and probably higher skills from the workforce. Of the 50 per cent of firms that increased the diversity of their operations, those who had been German owned for more than 21 years exceeded their share of the age group. Younger firms recorded less increase in activity as a share of their age group. Young firms (1 to 10 years) formed the majority (64.6 per cent) of the no increase group. This supports the proposition that increasing diversity is strongly linked to age (Table 2). In manufacturing, services and R&D areas over 50 per cent (77.7 per cent in R&D) had not changed the diversity of their operations between 1989 to 1998 (Appendix 1).

(Table 2 about here)

The evidence indicates that about half of German subsidiaries in NW England are following the stage or evolutionary process of internationalisation by increasing the diversity of their activities as they gain experience of operating in the host country. This suggests that, in the longer term, the impact on employment is likely to be centred on changing the pattern of jobs within MNCs. Nevertheless, main type of activity that has witnessed an increase in diversity has been sales and distribution. This activity was the only one that experienced a larger proportion (74.2 per cent)

that had widened the diversity of their operations as compared to narrowed or had remained unchanged (Appendix 1). This combined with the large number of firms that have not widened the diversity of their operation in manufacturing, services and R&D activities indicates that spillover benefits are likely to have been small. Nevertheless, the improvement in the efficiency of these firms will enhance their ability to expand, or at least protect employment within the firm (even if this is largely a benefit to the parent company). The impact on the home and host economies will crucially depend on the effectiveness of the adjustment policies of these countries. However, in principle the improvement in the allocation of resources should provide the potential for both home and host countries to improve employment, at least in the medium to long-term.

Transfer of technology to German subsidiaries

The majority of the firms (61 per cent) recorded that they had received technology transfers from their parent company. Of the firms that received technology transfer from their parent company 71.1 per cent reported no significant problems. Problems with the quality of labour were reported by 13.2 per cent of firms, 10.5 per cent indicated problems with infrastructure and 5.2 per cent recorded problems with suppliers and other types of obstacles. However, none of the respondents listed R&D as their main activity and over the last 10 years the number of companies who widened their R&D was exactly offset by those who narrowed these activities. Moreover, 77.4 per cent of respondents had not altered the scope of their R&D activities over a period of ten years (Appendix 1). The results indicate that there has been very little movement by German parent companies to develop R&D activities in NW England. There is also no evidence that centres of competence based on R&D where being developed.

That there are no German subsidiaries in NW England whose main business is R&D may be because there are problems with the technology capabilities in the region. However, this possibility seems to be contradicted by evidence (based on the number of patents taken out by foreign subsidiaries) that suggests that NW England is second after SE England as the most important locations for technology driven activities by foreign owned companies in the UK (Cantwell, Iammarino and Noonan, 1999). Moreover, US and Japanese subsidiaries in NW England have R&D centres in NW

England. In the case of Japanese MNCs, not regarded as prominent in developing R&D centres outside of their home base, the share of R&D centres is 5 per cent of the total of their subsidiaries in NW England (Invest in Britain Bureau, 1998).

Some Implications for Employment

The survey indicates that the main changes in employment resulting from German DFI have been the creation of a small number of direct jobs connected to sales, distribution and low level manufacturing such as screwdriver plants. It is likely that jobs have been lost in the host country from the displacement of domestic output by German exports. Many German firms do not seem to be evolving in the manner indicated by stage theories of internationalisation, or by the theories of centres of competence. A significant number of German firms appear to be stuck in the export enhancing stage and those that are moving on from this stage have yet to develop extensive R&D facilities in NW England. It appears that German firms have a tendency to retain core competencies in Germany.

Nevertheless, the UK is likely to have benefited from German DFI because of the potential to improve the allocation of resources by redeploying inputs released from the displacement of British made products by superior German products. To benefit from the possibility to improve the allocation of resources the released inputs must be quickly and at low cost transferred into more productive employment. However, opportunities to expand employment may not be located in the same places as the DFI inflows that create the potential to develop new industries. It is possible that inputs released as a result of DFI in NW England and other developing regions may lead to new opportunities that are mainly located in SE England. Consequently, labour that is not mobile, or that has inappropriate skills, will remain unemployed, or will be employed in low valued-added jobs. In these circumstances DFI inflows to the developing regions may not, in the long-term, have the effect of significantly boosting employment in the regions that attracts such DFI flows.

Less developed regions may become centres for the dispersal of low value-added activities from clusters that are suffering from rising input and congestion costs. Attracting such dispersal investments will generate employment, but will not

necessarily boost the long-term potential of the regions to attract high valued-added operations. Moreover, such investments are likely to be footloose and will move if input prices and congestion costs rise.

Spillover effects that help domestic industries to boost productivity and thereby enhance their long-term growth employment potential may develop from DFI inflows. However, export enhancing DFI and dispersal of peripheral activities from clusters is unlikely to provide significant spillovers that could enhance high value-added employment. Attracting MNCs that seek to grow centres of competence in the regions in which they locate is more likely to bring long-term and high quality employment benefits to developing regions. The crucial factors for successful and significant long-term employment creation are the possession and development of local network advantages and the ability to attract those MNCs that are seeking to develop into differentiated networks. The evidence from the survey and other research work indicates that German MNCs that locate in Europe are not, in significant numbers, engaging in the development of centres of competence. Given the current approach to intra-EU DFI by German and other European MNCs it may be sensible for developing regions to develop policies that attract Japanese DFI and US.

Conclusions

The evidence from this study and other research indicates that German DFI in Europe tends to be mainly export enhancing and is therefore likely to have increased, or defended, jobs in Germany and to have created a small number of jobs in the host countries. However, jobs in the host countries have probably been lost because of the large proportion of German DFI that has been export enhancing. Moreover, the widespread use of mergers and acquisitions as the main mode of entry is also likely to have led to some job losses. Export enhancing German DFI into the host countries may have provided the potential to improve the allocation of resources by channelled released inputs from domestic firms into new industries. To acquire these benefits effective adjustment processes need to be in place. Nevertheless, the benefits of

improved resource allocation may not accrue to the region that hosts the DFI inflows that releases inputs.

The study did not find evidence to support the view that large numbers of German firms are significantly diversifying their operations as they gain experience that could permit them to reap regionally based advantages. The characteristics of the operations of many German subsidiaries suggest that there are unlikely to have been significant spillover benefits to domestic industries. The evidence suggests that German DFI into NW England may not have made a significant contribution towards the creation of high-valued added employment in the host region. The results of the survey indicate that a much of German DFI inflows into NW England has not led to the evolution of subsidiaries in a way that is conducive to either the significant expansion of additional jobs or to the development of highly skilled employment based on local network and other types of geographical advantages.

It appears that much of German DFI into NW England has generated a small number of jobs from export enhancing DFI (the process shown on left hand side of Figure 2). Some jobs may also have been generated by dispersal investments of non-core activities (the process shown on the bottom segment in Figure 2). This type of subsidiary development is unlikely to have increased the potential of the region to expand high quality employment. The type of subsidiary development that is illustrated by the central section in Figure 2 does not appear to be prominent among German subsidiaries in NW England. This maybe because of infrastructure, institutional and other problems in the region that hamper the evolution of German subsidiaries in a way that is conducive to the growth of high quality employment. However, evidence of higher level operations by non-European subsidiaries in NW England suggest that at least part of the problem is due to the strategies adopted by German parent companies. There is also evidence that other European MNCs behave in similar ways to German companies (Chesnais and Soilleau, 2000).

The study provides support for the development of policies that seek to encourage DFI inflows that are conducive to the development of centres of competence based on geographical benefits arising from effective local networks that help to reduce costs and improve quality. Investments by MNCs that generate significant spillover benefits to industries that are, or could be, located in the host regions would also be

attractive for developing regions. The past record of DFI inflows in the EU suggests that attracting non-European MNCs may provide better prospects than European MNCs of gaining such high quality employment effects.

Caution is necessary in interpreting the results of the survey because the sample is small and information was not available from parent companies on the issues raised by the UK sample. A fuller picture about the employment effects would require a larger survey that included matched responses from the parent companies. It would also be useful to conduct in-depth interviews with parents and subsidiaries to further explore the linkages between DFI operations and employment. In-depth interviews and a larger survey would also provide a more detailed picture of the nature of DFI operations. Studies on the characteristics of DFI flows from other European and non-European MNCs would shed light on whether German DFI is more or less likely to enhance the development of high value-added employment in host regions.

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Table 1 Market Supply and Employment (%)

	Change in Employment ¹			Age of Firm ²				Size of Firm ³			
	Increase	Decrease	No Change	1-10	11-20	21-30	> 30	1-9	10-99	100-499	> 500
UK Market (72.6%)	77.5	64.0	68.3	48.9	28.9	13.3	8.9	85.7	82.8	40.0	75.0
UK & Foreign Markets (27.4%)	22.5	36.0	31.7	58.8	11.8	23.5	5.9	14.3	17.2	60.0	25.0
% of Class	64.5	17.3	18.2	51.6	24.2	16.1	8.1	22.6	46.7	24.2	6.5

n = 62

1. For example, 77.5% of firms that supply only the UK market increased their employment between 1988 to 1998.

2. For example, firms that are between 1-10 years old that supply only the UK market account for 48.8% of the total number of firms that supply this market

3. For example, 85.7% of firms that employ between 1-9 workers supply only the UK market.

Table 2 Diversity of Activities and Employment

Diversity	Change in Employment ¹			Age of Firm ²			
	Increase	Decrease	No Change	1-10	11-20	21-30	> 30
No Increase (50%)	51.4	54.5	52.4	64.6	19.2	9.6	6.5
Increase (50%)	48.6	45.5	47.6	48.4	19.4	22.6	9.6
% of Class	64.5	17.3	18.2	51.6	24.2	16.1	8.1

n = 62

1 For example, 51.4% of firms that reported no increase in the diversity of their operations recorded that they had increased their employment.

2 For example, firms that are between 1-10 years old account for 64.6% of the no increase in diversity of activities group.

Appendix 1 Profile of German Subsidiaries (%)

<u>Distribution by Sector</u>				<u>Distribution by MainType of Activity</u>	
	Establishments		Employees		Establishments
Manufacturing Sector	85.5		94.5	Manufacturing Plants	30.7
Service Sector	14.5		5.5	Sales/Distribution establishments	54.8
				Services establishments of German service sector firms	14.5
				R&D	0.0
<u>Change in Diversity of Activities (over last 10 years)</u>				<u>Technology Transferred From Parent</u>	
	widened	narrowed	unchanged		
Manufacturing	40.3	6.5	53.2	Problems recorded	28.9
Sales/Distribution	74.2	8.1	17.7	Quality of labour	13.2
Services	27.4	3.2	69.4	Infrastructure	10.5
R & D	11.3	11.3	77.4	Suppliers	2.6
				Other	2.6
<u>DFI Mode</u>					
Greenfield Investment	37.1				
Merger/Acquisition	51.6				
Other	11.3				