

# **DOES FOREIGN DIRECT INVESTMENT IMPROVE EMPLOYMENT IN HOST REGIONS?**

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## **Abstract**

*This paper investigates the role of direct foreign investment (DFI) in promoting employment in host regions. The implications for employment are considered using a theoretical framework on how Multinational Corporations (MNCs) develop their network of subsidiaries. The theoretical framework suggests that the development of subsidiaries should follow an evolutionary path beginning with low level activities such as export enhancing investments that diversify into operations that are more complex. In countries with similar levels of development, but with slightly different market, technological and institutional conditions, DFI flows should stimulate the construction of geographically based networks of subsidiaries. The paper develops a theoretical case that the growth of extra and intra-EU DFI flows should lead to the development of diversified networks of subsidiaries and seeks to identify how this will impact on employment. The framework suggests that the initial impact on employment is likely to be small and mainly linked to the creation of low skilled jobs with the loss of employment in host economies due to the displacement of domestic output by increased exports from the parent companies of subsidiaries. However, in the longer-term DFI flows should diversify the operations of subsidiaries thereby inducing a change in the pattern of jobs in host regions. Nevertheless, studies of the development of the European subsidiaries of European MNCs suggest that they develop their subsidiaries in ways that suggest that, in many cases, the predictions on employment derived from the theoretical framework are not emerging from intra-EU DFI. The framework is assessed using evidence from a survey of German subsidiaries in North West England. The results suggest that German MNCs may not be providing the expected benefits that are sought from the large increase in intra-EU DFI flows that has followed from the integration programmes of the EU. The paper concludes with some policy implications and a future research agenda to expand and develop knowledge in this area.*

## INTRODUCTION

The integration programmes of the European Union (EU) such as the Single European Market and European monetary union are reducing the trading costs of intra-EU trade. These integration programmes are inducing significant restructuring of industrial structures by breaking down nationally based structures and replacing them with Pan-EU systems, albeit with significant variations according to sector and member state (European Commission, 1996). The operations of MNCs are crucial to this process as they provide the bulk of the output of the EU and their DFI flows, both extra and intra-EU, play a crucial role in the creation and evolution of Pan-EU industrial structures. Attracting DFI inflows and seeking to retain the subsidiaries that are created, or taken over, by MNCs has become a major plank in the regional policy of the UK and other 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 on host regions (Hill and Munday, 1992). This paper provides an analysis of the theoretical case that DFI inflows will increase the level of economic development and thereby boost employment in the regions of the EU. The analysis suggests that the most significant employment effect of DFI inflows, between economies at similar levels of development, is likely to be to alter the pattern of jobs by expanding employment in host regions 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 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 used to assess links between subsidiary development

and employment. This evidence suggests that many German subsidiaries are not moving on from the DFI that is primarily export enhancing 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 or have made a important contribution to altering the level of employment specialisation in host regions. The paper concludes with some tentative policy recommendations on how to encourage DFI flows that would make significant contributions towards closing the development gap in the regions of the EU and a sketch of a future research agenda to advance our understanding of the links between DFI and employment.

## **EUROPEAN INTEGRATION AND DFI FLOWS**

About 60 per cent of DFI inflows in the EU come from the member states, that is, they are intra-EU flows (Dunning, 1997a). Geographical concentration is most pronounced in financial services, pharmaceuticals, IT and other high-tech industries (Dunning, 1997b). Increasingly DFI flows are been directed towards the periphery of the EU, but mainly in areas such as car assembly and other lower valued added activities (Dunning, 1997a).

Studies of European MNCs reveal that they are less likely than non-European MNCs to develop core competencies in subsidiaries that are located in the member states (Chesnais, Ietto-Gilles and Simonette, 2000). A study of German DFI in the UK and Ireland found that German owned subsidiaries tended to focus on exporting enhancing activities and that there was little evidence that their subsidiaries where 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 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).

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-industry and 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.

European integration has led to a large increase in intra and extra-EU DFI flows. However, non-European MNCs have made more progress in developing integrated pan-EU operations by developing integrated networks among their European subsidiaries. It is also clear that most of the development of high value added activities have been located in areas in the heartland of the EU while DFI flows to the periphery DFI flows is often skewed towards low-level operations. These developments suggest that economic integration in the EU should be inducing labour specialisation in the regions as DFI flows lead to restructuring of the economic based with core activities requiring high skilled labour being increasingly located in the heartland and secondary and lower value added operations in the peripheral regions.

## **THEORIES OF DFI AND EMPLOYMENT – TRADITIONAL VIEW**

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). Whereas, 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 rather mechanistic and suggest that MNCs follow a rigid linear development of internationalisation that is not often verified by empirical work (Andersen, 1993). Even some of the proponents of these theories cast doubt on the predictive power of stage theories of internationalisation (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. 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 provide support for the view that DFI flows follow an evolutionary processes. The time path and major characteristics of this evolutionary process seems to be influenced by a variety of factors, but in it seems that firms follow a progression from simple

to more complex activities. However, this is not a straightforward or a linear development and appears to be strongly influenced by sector and the capacity of host regions to assimilate imported technology (Young, 1987).

Employment is 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

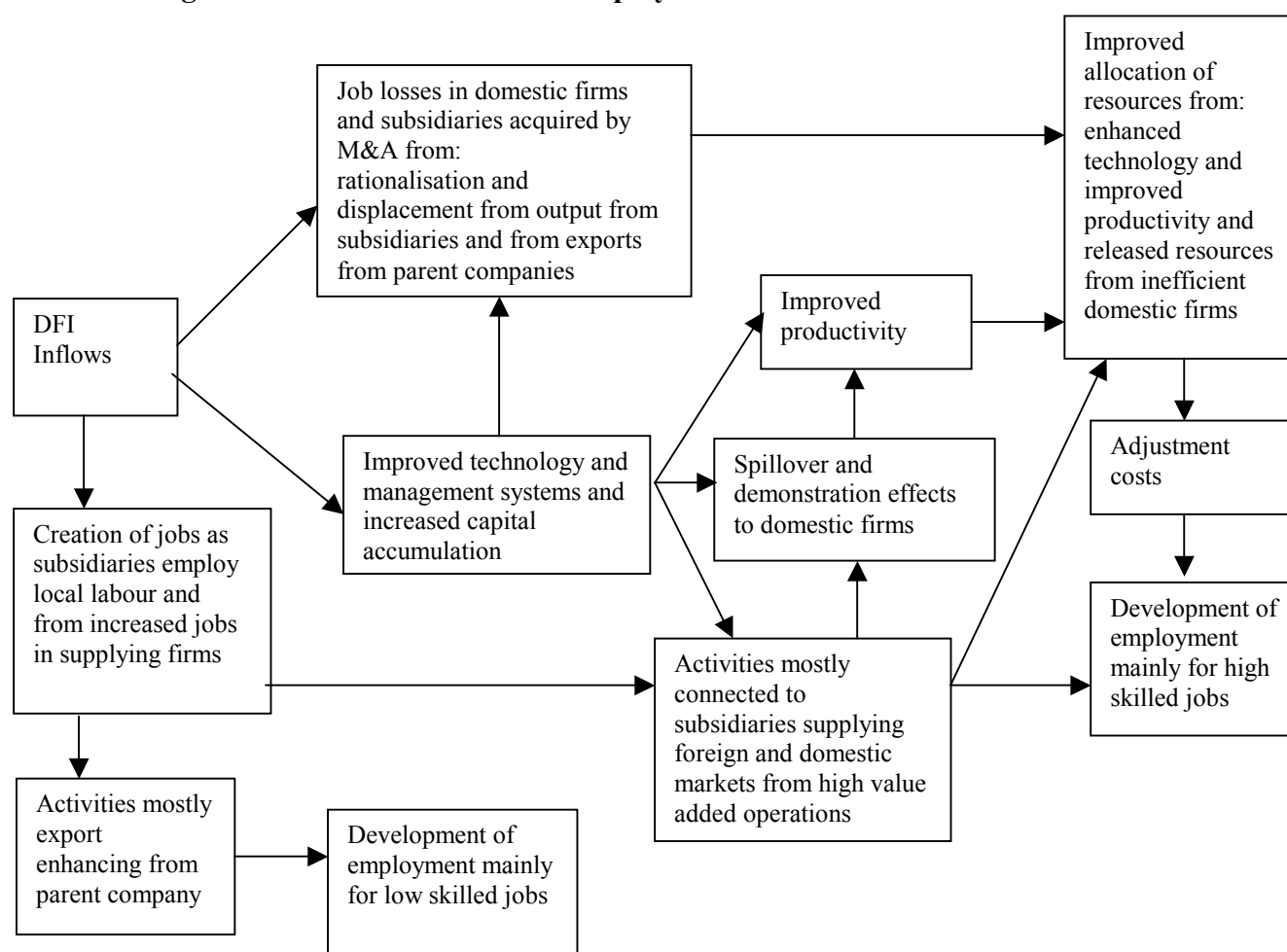
effects are large and benefit both industries that experience large DFI flows and other industries (Hubert and Pain, 1999). The additional employment and changes to the pattern of jobs in host regions arising from DFI spillovers appear to be small and normally takes a long time to materialise (Gillespie, 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. Improvements in the allocation of resources from DFI inflows can play an important role in influencing the employment effects of foreign investments (OECD, 1994).

Clearly, export enhancing DFI will not boost the level of employment and improve the skill level of jobs in host regions by as much as investments to supply domestic and foreign markets from host regions. The more subsidiaries buy inputs from the host region the higher will be the employment effect in host regions. Parent companies that permit their subsidiaries to have product mandates and autonomy to develop technologies will encourage the growth of high skilled jobs in host regions. If the operations of subsidiaries have significant spillover to other firms in the region, this will also contribute to both the growth of employment and the skill level of jobs. Stage or evolutionary theories of internationalisation suggest that DFI flows will initially lead to mainly export enhancing investments with the creation of mainly low skilled jobs with the loss of some domestic jobs because displacement from increased imports. However, DFI inflows should progress to higher value added operations and technology should be transferred leading to spillover to domestic firms.

Moreover, after a period of adjustment the improvement of the allocation of resources resulting from DFI inflows should improve the potential to boost the skill level of jobs. These factors should boost productivity in host regions and create the conditions for the growth of more high skilled jobs as regions specialise in higher value added activities (see Figure 1)

**Figure 1 DFI Inflows and Employment – Traditional View**



## THEORIES OF DFI AND EMPLOYMENT – MODERN VIEW

The OLI paradigm and stage theories have 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, in aggregate DFI flows 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, but that where technology transfers are significant the boost to employment will be skewed towards high skilled jobs.

## **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 focus 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 became known as the new economic geography (Ottaviano and Puga, 1998). Models based on the new economic geography focus on the importance of factor mobility and availability 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 the economies of scale and scope and the market size advantages of clusters 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 for the EU 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 the employment effects of DFI flows are similar to the traditional view. The main difference is that the improvements in resource allocation induced by DFI flows have a pronounced geographical impact on employment. Therefore, the potential to increase employment and the adjustment costs associated with the transfer of released inputs are likely to have strong regional characteristics. Moreover, geographical concentration is likely to lead to increased demand for labour, in host regions, that is used to provide the goods and services that prove to be attractive to MNCs. Therefore,

geographical concentration based on the development of high value added operations with significant use of new technology is likely to boost the demand for high skilled labour in host regions.

### **Resource Based Theories**

Resource based theories regard differentiated networks of subsidiaries as a major method of developing competitive advantages (Bartlett and Ghoshal, 1989, Ghoshal and Nohria, 1989, Doz and Prahalad, 1993). MNCs that develop 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 and Hood, 1998, Birkinshaw, Hood and Jonsson, 1998). Moreover, centres of competence located in the periphery of economic activity play an important role in the development of regions that are not part of the heartland of the European Union (Taggart and Taggart, 1997).

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. 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 provide attractive locations for MNCs. 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

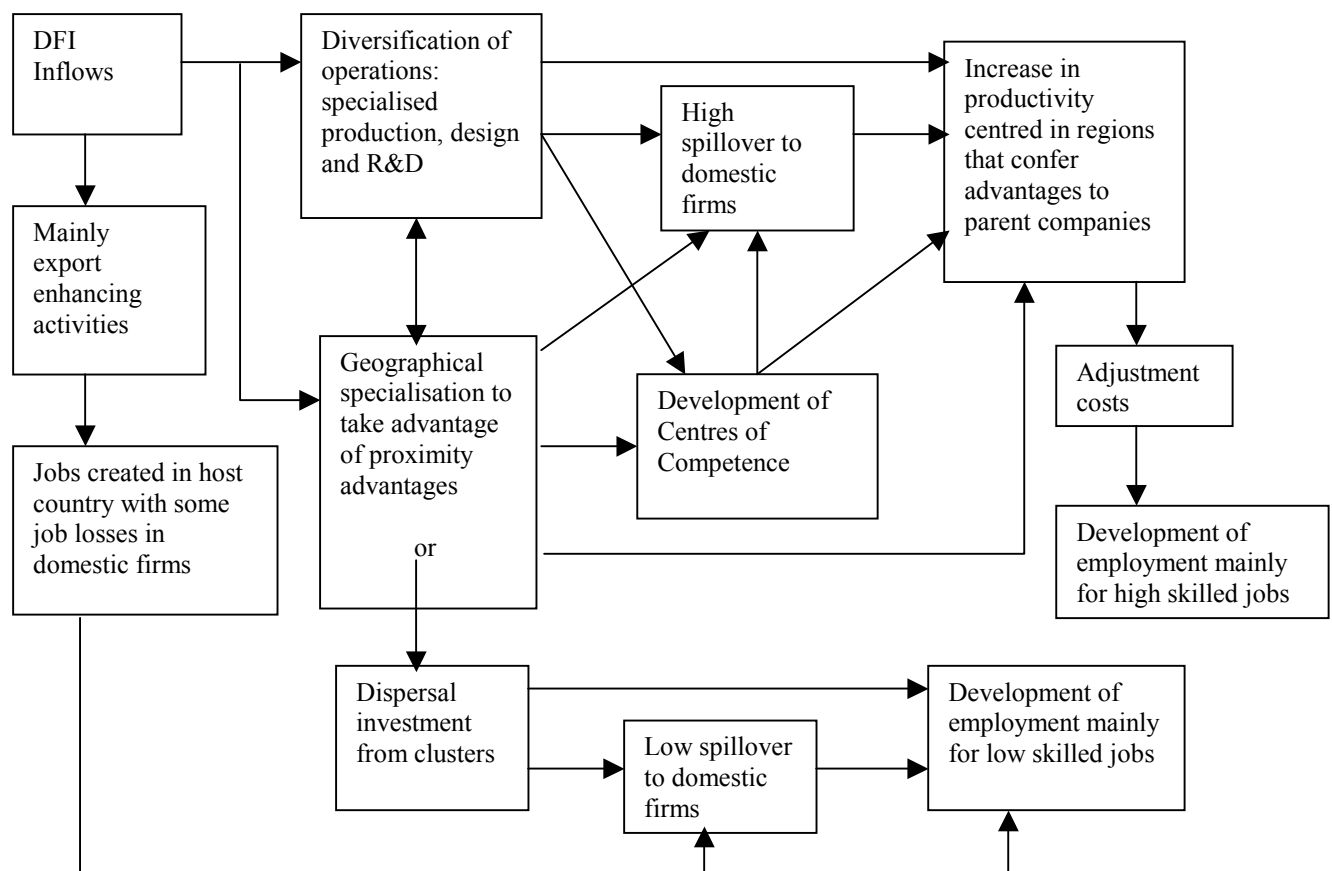
In those subsidiaries that develop into centres of competence demand for labour and other inputs that confer advantages to the parent company will rise. This is most likely to involve an increase in demand for more highly skilled and specialised types of inputs. However, the demand for inputs used in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

### **DFI and Employment Effects**

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 DFI Inflows and Employment – Modern View**



## 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 in the EU.

1. The more subsidiaries supply foreign as well as their domestic markets the less likely is it that DFI flows will lead to job losses and will increase jobs 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 technology as parent companies learn about the advantages that are available 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 and from studies on the DFI strategies of European MNCs are used to provide evidence on these four trends. At least two other trends are likely to be important for the development of subsidiaries and the consequent impact on employment. Firstly, historical factors that influence subsidiary development, including issues such as the methods used to acquiring subsidiaries, the historical development of the economic structure of host and home regions and the inherited resource base of parent companies and subsidiaries. Secondly, the characteristics of the industrial structure of host regions are likely to be important for the type of DFI inflows and for their effect on employment. For example, host regions with a strong base in particular industries is likely to attract high value-added operations in those industries with a

consequent tendency to boost high skilled employment. The data obtained from the study does not permit these factors to be directly considered. However, some reference to these issues is gleaned from the results of the survey.

## **GERMAN DFI INTO NORTH WEST ENGLAND**

A questionnaire was sent to 190 German owned companies in North West 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 small number of greenfield sites reflects the low number of large foreign owned manufacturing sites that have been attracted to North West England in the last 20 years. According to the government agency (Inward), which is responsible for attracting DFI to North West England, this is due to a lack of suitable sites for large greenfield developments.

### **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 to 99 size class. The time path of the development of direct employment by German



subsidiaries in North West 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).

### **Industry Distribution**

The distribution of German subsidiaries across industries is shown in Appendix 1. As the North West of England has the largest machinery and equipment manufacturing sector of any region in the UK it is not surprising that the electrical and mechanical industries has attracted the largest share of German DFI. The region also has a strong chemical industry and this industry also received a large share of German DFI. These two industries have a high ratio of production plants to sales and distribution as the main type of activity. However, other industries have higher ratios - building materials and furniture. While other industries have no production plants - IT and computing and textiles. The latter industry has a strong presence in North West England, but is in rapid decline. Only the electrical and mechanical equipment industry has subsidiaries of more than 400 employees.

There is little evidence that German DFI into North West England is contributing to the development of new high-tech industries other than those that may be located in the electrical and mechanical equipment and chemical industries. In many respects, these industries are not at the cutting edge of technological developments. Furthermore, the low level of activity in pharmaceutical and IT and computing indicates that German DFI is not

very activity in these high-tech areas. The dominance of sales and distribution activities in most of the industries also indicates that German DFI is unlikely to have made a significant contribution towards developing high skilled employment in the region. However, more detailed information on industry specific employment trends is required to improve our understanding in this area

### **Markets supplied by German subsidiaries**

Some 72.6 per cent of German firms in North West 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 to 10 years and 21 to 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 to 9 and 10 to 99 employees) and large (over 500 employees) are predominately involved in supplying only the UK market. However, more middle-sized companies (100 to 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 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 is 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 North West England. It seems that only small increases in direct employment in the UK have been experienced because of German DFI. 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. However, 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 linked to age (Table 2). However, 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 North West England are following the stage development 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 factor 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 North West England. There is also no evidence that centres of competence based on R&D where being developed.

That there are no German subsidiaries in North West England whose main business is R&D may be because there are problems with the technology capabilities in the region. However, this possibility is contradicted by evidence (based on the number of patents taken out by foreign subsidiaries) that suggests that North West England is second after South East 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 North West England have R&D centres in North West 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 POLICY**

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. A large study of the effects of DFI inflows on employment in developed countries also supports the view that these investments help to create or defend jobs in home countries (Andersen and Hainaut, 1998).

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 North West England. It appears that German firms have a tendency to retain core competencies in Germany. The results of the survey support the findings of other studies that indicate that

subsidiaries of European MNCs based in the EU tend to retain core operations in their home base (Chesnais and Soilleau, 2000).

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 employment that is more productive. 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 North West England and other developing regions may lead to new opportunities that are mainly located in South East 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 in the long-term may not 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 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 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 most 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.

The study provides tentative 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. More detailed information on the history of the subsidiary-parent relationship and on the characteristics of DFI flows to the different industrial sectors in host regions



would also extend and clarify our understanding of the complex interaction between DFI flows and employment.

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**Table 1** **Market Supply and Employment (%)**

	Change in Employment <sup>1</sup>			Age of Firm <sup>2</sup>				Size of Firm <sup>3</sup>			
	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**

	Change in Employment <sup>1</sup>			Age of Firm <sup>2</sup>			
Diversity	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		54.8	
				Services		14.5	
<u>Change in Diversity of Activities (over last 10 years)</u>				R&D		0.0	
	widened	narrowed	unchanged	<u>Technology Transferred From Parent</u>			
Manufacturing	40.3	6.5	53.2	Yes	61	No	39
Sales/Distribution	74.2	8.1	17.7	Problems recorded		28.9	
Services	27.4	3.2	69.4	Quality of labour		13.2	
R & D	11.3	11.3	77.4	Infrastructure		10.5	
				Suppliers		2.6	
				Other		2.6	
<u>DFI Mode</u>							
Greenfield Investment	37.1						
Merger/Acquisition	51.6						
Other	11.3						
<u>Distribution According to Industry (Manufacturing) – Ratio of Manufacturing Plant to Sales and Distribution as Main Activities (in brackets)</u>							
Pharmaceutical and Health Products		7.5 (0.33)	Chemicals*	28.3 (0.66)	Building Materials*	11.4 (1.00)	
Elect & Mechanical Equipment *+		43.4 (0.53)	Textiles	1.8 (0.00)	IT & Computing	3.8 (0.00)	
Furniture^		3.8 (1.00)					
* Industries with at least two plants employing between 100 to 250 (90% of which employ less than 200)							
+ Only the Elect & Mechanical Equipment industry has plants (three) that employ over 400							
^ One plant employing 220							

n = 62